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Original Communications

PHYSIOLOGY AND PATHOLOGY OF THE PANCREAS.*

By K. D. GRAVES, M. D., Roanoke, Virginia.

The pancreas is a solid glandular organ, about 6 inches in length, and about 1½ inches in diameter, situated transversely across the posterior wall of the abdomen, at the back of the left epigastric and hypochondriac regions. It is subdivided into acini or lobules, each of which drains into a minute canal, which in turn empties into a large central canal, the duct of Wirsung, which discharges its contents into the duodenum. The secretion thus formed, called the pancreatic juice, contains trypsin, steapsin and various other enzymes, concerned in the digestion of fats and proteins.

Another entirely different pancreatic secretion is formed by small clumps of small, pale staining cells, called, from their insular isolation, the islands of Langerhans. These little collections of cells, distributed apparently haphazard through the pancreas, although somewhat more abundant in the distal portion of the organ, have, as their function the formation of an internal secretion used to stimulate the assimilation of carbohydrate by the tissues. Thus the pancreas is probably the most important of the glandular organs, if a comparison may be made as to the relative importance of various organs essential to animal existence—in that it furnishes secretions necessary for the digestion and assimilation of fats, carbohydrates and proteins.

It is upon the secretion of these islands of Langerhans that the attention of the world is focused today; students of pathology have for many years suspected the existence of this material; but it remained for Banting and Best and their colleagues to isolate it and present it to the medical profession. Even as far back as 1889, Mering and Minkowski showed that extirpation of the entire pancreas led to a series of symptoms typical of diabetes mellitus.

*Read as part of symposium on Diabetes, at the meeting of the Southwestern Virginia Medical Society in Radford, March 20-21, 1924.

Opie in 1890, and later Schaefer and Ssobolew called attention to the islands of Langerhans in connection with diabetes, and maintained that the active portion of the pancreas in preventing diabetes was to be found in them. Probably one of the closest approaches to a great discovery was made by MacCallum in 1909, and Kirkebride in 1912, when they performed a most interesting experiment, which was as follows: Half of the pancreas of a living animal was ligated, and the animal survived; a year later the animal showed the transformation of the ligated portion into a thin transparent film in the mesentery; extirpation of the normal half of the pancreas was followed by a transient glycosuria, from which the animal survived and recovered; but after the extirpation of the thin film which represented the other half of the pancreas, the animal developed severe diabetes; and this film contained many islands of Langerhans. It seems such a pity that these two men should have come so near a wonderful discovery, which in cold retrospect seems almost inevitable, and even then should have missed it. Had they been able to make an extract of this portion, from which all the pancreatic juice-secreting elements had been destroyed, and tried this out on pancreatectomized animals, diabetes would have been under control ten years sooner than it was.

Much work has been done to determine the exact action of this secretion, or insulin, as it is called, on the animal. In the test tube, this does not lower the percentage of sugar in the blood; although blood sugar is lowered when the material is injected subcutaneously or intravenously. The present consensus of opinion is that it either acts on the tissues, to enable them to absorb and utilize carbohydrate, or that it has some action on the carbohydrate itself, making it more readily assimilable.

Surprisingly few cases of diabetes have been found which show gross changes in the pancreas; but, as has been mentioned by many authors, the majority of cases show microscopic changes of one sort or another, in the number of the islands or their general appear-

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ance. Authorities differ as to the characteristic changes which may be accepted as pathognomonic of diabetes; Weichselbaum lays stress on the qualitative characteristics, Weiberg on the quantitative; Allen considers fibrosis and chronic pancreatitis as evidence of functional impairment; while Cecil takes the middle ground and simply reports pathological changes of one sort or another in 87 per cent of his cases. Even this most broad terminology leaves 13 per cent of his cases in which he could find no pathological conditions of the pancreas, yet the patients had clinical diabetes mellitus. It would therefore appear that in the light of our present knowledge at least a good many cases of diabetes are caused by functional rather than organic impairment. We all know that certain states of mind can affect the secretion of gastric juice, for instance; that food passing through the pylorus of the stomach can cause the delivery of bile into the intestine; and that headache can be caused by eye strain as well as by an organic brain condition such as a brain tumor; following this line of reasoning to its logical—or illogical—conclusion, it would, therefore, seem to be within the realm of possibility that the internal secretions and hormones of the body may be so inter-correlated as to affect one another, causing either an increase or deficiency according to the biochemical condition existing. It seems to me that this may explain to a certain extent some of the cases we see now and then, which when we first see them have severe diabetes, still after a comparatively short course in dieting and the use of insulin have their insular function restored, and appear to handle food almost normally. It appears in these cases that by artificially supplying insulin the islands of Langerhans are put at rest, and later are able to take up their work again with renewed energy and function up to par again, just as by splinting a broken bone we may often get healing of the fracture and normal use of the limb again.

In conclusion, may I say that, although our knowledge of the physiology and pathology of the pancreas, especially in so far as it relates to diabetes, has just passed out of the experimental into the practical stage, still a tremendous stride has been made; and the next generation will see still further advancement, probably not so much in a study of the pathological changes as in correlating metabolic and physiological studies in a practical application on the diabetic patient; and that these studies will probably relate, not so much to the microscopical changes in the islands, as to the extent to which these islands deliver the goods; by their fruit ye shall know them.

Lewis-Gale Hospital.

THE SYMPTOMS AND DIAGNOSIS OF DIABETES MELLITUS.*

By F. H. SMITH, M. D., F. A. C. P., Abingdon, Va.

The main symptoms of diabetes have been recognized since the first century of our present era. Aretaeus, about 150 A. D., first coined the term diabetes, meaning a siphon. The first bit of research work done upon diabetes should properly be credited to certain Hindoos of India. In the Ayur Veda of Susruta, written in the sixth century, diabetic urine was said to taste sweet. In spite of this priority, the credit for this ingenious test is generally ascribed to Thomas Willis, who wrote as late as 1674. This author must have been a very positive fellow in his day, as shown by this quotation:

"But as to what several Authors say, that the Drink is little or nothing changed, there is no truth in their suggestion; Because in all People (that I ever happened to know, and I believe it to be so in all) their Urin was very different not only from the Drink that they took in, but also from any other humors that are usually generated in our Bodies, being exceedingly sweet, as if there had been Sugar and Honey in it."

Johann Peter Frank, in 1794, distinguished the two forms of diabetes, calling the one Diabetes Mellitus, or verus; the other Diabetes Insipidus, or spurious.

It is a far cry from those days to this. Much of interest can be gleaned from the history. But three items stand out boldly from all the others as stepping stones in our knowledge of the disease. In 1889 von Mering and Minkowski proved diabetes mellitus to be pancreatic in origin. In 1890, Opie narrowed the essential pathology down to that part of the pancreas known as the islets of Langerhans. In 1922, Banting and Best isolated the substance now called insulin, or iletin, from the islets of Langerhans, and established it as a true internal secretion of that part of the pancreas.

Today, we can define diabetes mellitus as, essentially, a condition of hypoinsulinism. It is to this hypoinsulinism that is attributed the excess of glucose in the blood and its con-

*Read as part of symposium on Diabetes, at the meeting of the Southwestern Virginia Medical Society in Radford, March 20-21, 1924.

stant appearance in the urine, so long as the patient remains on a normal diet. Already there is speculation as to the probability of an antithetic condition which can properly be called hyperinsulinism. By analogy, we should expect symptoms such as follow an overdose of insulin.

I suppose there are no exact figures of the prevalence of diabetes. It has been estimated that there are one million cases in the United States: i. e., one in every 110 individuals. At the same rate, there would be 20,900 diabetics among the 2,300,000 Virginians! As statistics go, the disease is on the increase in the registration area of this country, at least during the decade 1910-1920. The Maryland mortality rate per 100,000, for instance, was 12.6 for 1910, 17.0 for 1920. Now, with the renewed interest and increased hopefulness in management, I venture the prediction that the incidence will still further increase as doctors all over the land replenish their supplies of Fehling's solution and spirit lamps!

As yet, however, I have the impression that if this estimate of the prevalence of diabetes be correct, this section of Virginia is a distinct exception to the average. In order to check this impression as nearly as I can, I have asked information of our Bureau of Vital Statistics. Though I asked for figures bearing upon the disease incidence, Dr. W. A. Plecker gives me these figures:

THE DEATH RATE PER 100,000 POPULATION FROM DIABETES IN

	VA.	N. C.	N. Y.
1913	7.5		19.2
1914	8.2		21.4
1915	9.6		24.5
1916	9.0	6.6	22.5
1917	8.68	7.48	24.24
1918	8.54	7.15	22.437
1919	8.4	6.2	21.2
1920	9.3	7.7	23.3

I suppose there are no figures representing the number of living diabetics in the State. Dr. Plecker remarks, however, that it is an interesting feature that the Southern States stand very much lower than the Northern States; the two extremes being Massachusetts, with a rate of 32.5 per 100,000 population for 1920, and South Carolina with a rate of 3.6 for the same year: Massachusetts being nearly ten times greater. He says he is unable to explain this wide variation.

At least, diabetes is not one of the commoner diseases seeking relief of a general hospital. Compared with peptic ulcer, for instance, I find in our records ulcer three times as frequent as diabetes; thyrotoxicosis in its various degrees about three times as common; chronic nephritis nearly six times, and pulmonary tuberculosis of some degree of activity nearly nine times as often. Of course, it might be contended that diabetes is a disease subjected to strict laboratory control, whereas the diagnosis of the other diseases named is not necessarily confined by such strict checks. But I feel sure that we are not prejudiced in clinical judgment in favor of these several diseases as against diabetes to the extent indicated by these relative figures.

In the same series we find two instances of diabetes insipidus, and one case of renal diabetes so-called, which latter diagnosis turned out later, as usual, to be an error.

The symptoms of diabetes mellitus are interesting as we try to trace them back to their origin. Tormenting thirst is apt to be the first noticeable symptom. Coincident with it is a disturbing frequency of urination and volume of urine. The patient comments upon the fact that, in spite of voracious appetite, he is constantly losing weight until his clothes threaten to drop off of him. Weakness of body and lassitude of mind grow apace. But any or all of these symptoms may be missing in the individual case, and glycosuria be discovered at life insurance examination or upon routine urinalysis. It is not known how long glycosuria can exist without symptoms. Certainly, it is often the case that some complication, such as recurrent boils, gangrene of a terminal part, or an obstinate eczema, leads to examination and recognition of the underlying condition.

There are some symptoms not so commonly connected in the mind with diabetes. For instance, two of our cases complained of dizziness as the main, almost the only, symptom. Itching, especially of the vulva, may be a valuable clue. So, indigestion, rheumatic pains or cramping in the limbs, pains anywhere, and loss of sexual power from time to time led the patient to examination with detection of diabetes.

Saturation of the blood with sugar, polyuria and the loss of the caloric value of sugar account for most of the symptoms. Hyperglycemia causes thirst, thirst leads to increased intake of water, the increase of osmotic pressure leads to polyuria, and to desiccation of tissues, the dry skin and the dry mouth. The

loss of sugar through the urine robs the tissues of considerable food value. Hence, emaciation and weakness ensue. A vicious circle is set up. Itching, in turn, is attributed to the irritation of the sugar passing through the skin or over it, and itching causes scratching and invites infection.

The urine of the typical diabetic is light in color, increased in amount, above 1.030 in specific gravity, and shows the reaction for glucose with any of the well known reagents. But any one or more of these characteristics may be wanting, and yet the patient be diabetic. In our series, 26 per cent had a urinary output of less than 1,500 c.c.; 22 per cent specific gravity of less than 1.030; and 6 per cent showed no sugar in the urine at one or more examinations.

Hyperglycemia and glycosuria, then, are the explanation of diabetic symptoms. The one seems to cause the other. It is interesting, therefore, to discuss the occasions when glycosuria is reported, though the patient denies diabetic symptoms.

Were it not for the fact that instances continue to arise, it would not seem necessary to mention the possibility of contamination of the specimen by a copper-reducing substance in the container in which the specimen is brought to the laboratory. One of the other sugars, such as levulose and galactose, may be confused with glucose. An atypical reduction may be produced by substances other than sugar in the urine, or by the elimination of one of the copper-reducing drugs. Finally, confusion may arise through poor reagents. The thought of these possibilities suggests their own solution.

Sometimes the fault is with the patient or the clinician. Not infrequently another condition is so prominent in the patient's mind that he overlooks diabetic symptoms. Such an instance is illustrated in the case of a boy, whose mother brought him to the physician because of a deformity of his elbow joint occurring some time before, without known injury. The routine history was absolutely silent for any suggestion of diabetes; and yet the laboratory reported the urinary specific gravity 1.041; 24-hour output 1425 c.c.; glycosuria 9.0 per cent; total loss of sugar 128.25 gm.; and blood sugar 0.36 per cent. When the mother was again questioned, she stated that she had noticed an abnormal appetite, thirst and output of urine for about three weeks; but the boy had not lost weight, at least only two pounds; and she thought nothing of these symptoms. It was the elbow she was worried about!

More interesting and more complex is the condition known as alimentary glycosuria. This is, as you know, a condition brought about by overloading what is thought to be a normal carbohydrate metabolism by over-ingestion of sugar. In such circumstance the glycosuria should promptly disappear and not recur, unless the individual indulges in another sugar spree. At best, cases of this type of glycosuria should be regarded with a high degree of reservation. The chances are that such an individual has an impaired carbohydrate metabolism, that he is a potential diabetic.

Still more interesting, because rarer, is the possibility of so-called renal diabetes. This is the condition where (1) there is a fairly level output of sugar, very little changed by varying the intake of carbohydrate; and yet (2) the blood sugar is always well within the normal limits. There are none of the clinical manifestations of true diabetes; the condition remains stationary indefinitely; the patient suffers no harm from the constant low-grade glycosuria. At least, renal "diabetes" is a misnomer; renal "glycosuria" is a better term. Even so, all such diagnoses have proved to be erroneous with time and further observation, in my own experience.

Glycosuria appears, too, in disturbance of the other endocrine glands. According to the theory of von Noorden, I believe, the suprarenal glands promote the mobilization of the sugar from its storehouse in the liver. The pancreas tends to lock the glycogen within the hepatic warehouse. The thyroid, in turn, antagonizes the internal secretion of the pancreas. Upon such a conception it is easy to understand that hyperthyroidism may lead to hypoinsulinism and glycosuria; while stimulation of the chromaffin system may temporarily increase the mobilization of the glycogen stored in the liver. Witness the administration of adrenalin in the hypoglycemia produced by insulin. It is probable that the glycosuria of brain puncture, and that following certain surgical operations, etc., is brought about through sympathetic stimulation of the chromaffin system, which in turn augments mobilization of the liver's supply of

glycogen. Possibly such hormonic disturbance may ultimately lead to true diabetes. I doubt, however, the propriety of regarding all such glycosurias diabetes, at least when frank diabetic symptoms are lacking.

Sometimes, on the other hand, we meet with a more or less complete chain of symptoms and signs of diabetes when the laboratory reports are negative in one or more essential findings.

Again, it is necessary to recall some of the possibilities of error. It is easy on careless examination to miss a trace of glycosuria because, its presence being not suspected, the reaction is not followed through.

The diabetic may have been so well coached in the relation between his diet and the appearance of sugar in the urine that he may, maliciously or unintentionally, mislead by refraining from sugar-producing food. Joslin says that by abstinence beforehand the diabetic patient might eat one meal containing approximately 100 to 150 gm. of carbohydrate, and 25 gm. each of proteins and fats without the appearance of glycosuria. If, however, the patient's urine is sugar-free when collected within two hours of eating two such meals consecutively, he is a safe risk for life insurance.

This, undoubtedly, is the simplest test for uncovering a latent diabetic, but Joslin himself admits that some mild cases will be overlooked when the functional tests end here. The fact is the occasional case requires resort to blood chemistry for detection.

The normal blood sugar content is variously stated as lying between the figures 0.06 or 0.08 per cent as the low point, and 0.10 and 0.12 per cent as the high point. While sugar has been found in the urine with the blood sugar as low as 0.07 per cent and has failed to appear in the urine when its concentration in the blood was 0.50 per cent (Joslin), the normal threshold above which glycosuria usually appears is somewhere around the figure of 0.17 per cent. In other words, the normal kidney is impermeable to sugar in concentration of less than 0.17 per cent.

Some puzzling problems in diagnosis are presented in connection with the blood sugar. Cases occur in which glycosuria has been found in small traces by one or more physicians. Upon examination diabetic symptoms may be denied *in toto*, the urine may be entirely negative for sugar, and the blood sugar may be well within the normal limits. We may be tempted to dismiss the patient with the opinion that there is no disease; or at most he suffers from alimentary glycosuria, or, possibly, renal glycosuria. But not all can be dealt with out of hand in such fashion. A young man of 17, for instance, reported that sugar had been found in his urine at intervals for ten months. He denied all symptoms except the loss of five pounds in weight. The specific gravity of the urine was 1.028; sugar was present in his urine to the extent of 0.59 per cent; and yet his blood sugar stood at 0.088 per cent. I shall revert to this case in a moment.

In far more cases we are puzzled by the fact that there is a constant hyperglycemia, possibly as high as 0.20 per cent, and yet no glycosuria appears.

In such cases as that of the boy with glycosuria and normal glycemia, a test referred to as the sugar tolerance test has been proposed as of value in diagnosis. This test is based upon the fact that the ingestion of sugar will result in a distinct increase of glycemia in all individuals, whether diabetic or not; but the glycemic curve will vary widely in the two cases.

If the normal individual takes one hundred grams of glucose on a fasting stomach, the glycemia rises to its highest point which is nearly always under 0.15 per cent, usually within thirty minutes. It falls to its fasting level or below within two hours after ingesting the glucose. At the height of the blood sugar curve, a trace of sugar may appear in the urine. In the absolute normal, there should be no glycosuria.

If, on the other hand, the diabetic individual takes one hundred grams of glucose, the curve representing the blood sugar level is very much higher, and the reaction is very much prolonged, so that the return to the fasting level may not occur even four hours after the ingestion of glucose.

We regard the boy of 17 who showed constant glycosuria as a case of mild, though true diabetes because his blood sugar curve began at 0.088 per cent on a fasting stomach, and even three hours after taking sugar it stood at 0.1117 per cent; and, furthermore, because after only four days of moderate reduction of his carbohydrate intake, the glycosuria had entirely disappeared.

I am not persuaded, however, that it is safe

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to rely entirely upon a moderate degree of hyperglycemia, or upon the so-called diabetic response to the sugar tolerance test in making an absolute diagnosis of diabetes mellitus. Both the hyperglycemia and the delayed fall after ingestion of sugar doubtless depend upon the same mechanism, a disturbance of the utilization of carbohydrates. However, overactivity of the thyroid, disturbance of the pituitary body, and especially in our experience chronic nephritis, by raising the renal threshold, may be responsible for a confusing sugar curve, as well as suggestive clinical symptoms. Great caution must be exercised in reaching a final conclusion upon this basis alone.

A consideration of the symptoms and diagnosis of diabetes would be very incomplete without reference to the complicating factors which may be as important as the disease itself. These complicating factors may be unconnected with the diabetes except as they exist in the same subject; or they may be directly consequent upon the diabetic process.

Certainly, diabetes does not render the individual immune to any other disease. In spite of authoritative opinion to the contrary, it seems probable that the depraved health and nutrition of the diabetic should predispose him to disease. Yet, after studying our own series, I doubt whether I could show that any intercurrent disease is more common in the diabetic than in the non-diabetic. Gall-bladder disease, appendicitis, pulmonary tuberculosis, oral sepsis, chronic tonsillitis and chronic nephritis are, for instance, among the most frequent findings in the general run of hospital patients. Therefore, it is not surprising that these conditions occur frequently as concurrent factors in diabetes.

An exception might be taken to cholecystitis. There is abundant reason to believe that there is an etiologic relation between the two, though through just what mechanism they are related is not entirely clear. It seems more rational to connect them up through the same causative factor than to believe that the cholecystitis is responsible for the diabetes. When it is recalled how much of the pancreas can be actually destroyed without interference with carbohydrate metabolism, it is unlikely that the pancreatitis so frequently accompanying cholecystitis is the sole factor. This common causative factor of the two may be, for instance, the factor producing the obesity, or, possibly, some focal infection.

I am equally certain that there is a distinct relation between obesity and diabetes. Diabetes seems to be the penalty exacted for putting on of fat about middle life. Yet it is surprising to note how many fat people show no glycosuria and no hyperglycemia, nor any other evidence of an actual or potential diabetes.

Joslin tersely says that diabetics seldom die of the disease *per se*, but of complications which are universally recognized as largely preventable: coma, gangrene, infections. Uncomplicated diabetes should end in death from inanition, tissue starvation. Few patients literally starve to death, but, in my opinion, more of our patients than we realized were done harm during the era so recently past when, in order to keep them sugar-free, we had nearly to starve them.

By infections we mean not only local, or surgical, infections, but also the general infectious diseases. A known diabetic under good care will have been warned of the danger of injuring himself in any way, and of the care of injuries, boils, corns, etc. He will be told to avoid contagious diseases. But the greater danger is that neither the injured one nor his attendant may have recognized the diabetes until infection or gangrene has developed. The danger is, of course, grave, but not within the scope of this paper to treat.

Coma is another matter. Its causes and the chemistry of the acidosis preceding it have been covered by others. Suffice it now to say that true diabetic coma is the end-result of acidosis. Acidosis, however, is not synonymous with the excretion of acetone bodies in the urine. The harm comes from the retention of these acid bodies, the exhaustion of the alkali reserve their neutralization imposes, and the effect that this exhaustion has upon the body fluids and tissues. This cannot be measured in terms of the acetone bodies that appear in the urine. It is true that acidosis rarely develops without acetonuria. It is also true that the interval between the first appearance of acetonuria and fatal coma may be less than a week. It is equally true that all of these bodies may be excreted through the urine for months and years without either subjective or objective symptoms of acidosis.

The test for the acetone bodies is, nevertheless, important, because their presence sug-

gests possible exhaustion of the body's alkali reserve. If the reaction of the urine be neutral or alkaline, it may be assumed that there is still abundant alkali to neutralize the acid.

More significant of the exhaustion of the alkali reserve is the presence of increased ammonia in the urine. Normally, about 0.5 gm. of ammonia is excreted in 24 hours, or about 5 per cent of the total nitrogen excretion. Because the acid bodies combine with ammonia, an increased excretion of the combined ammonia furnishes an index of the quantity of acid substances. It may be broadly assumed that no danger from acidosis exists when the ammonia remains below 2 gm. in 24 hours, or when its excretion is 20 per cent or less of the total nitrogen.

These several laboratory procedures measure the degree of acidosis. But the most direct index of the danger acidosis is imposing upon the vital activities of the organism is through the determination of the carbon dioxide tension in the blood. The carbon dioxide tension of the alveolar air is the same thing and is easier of determination. Van Slyke's method for the one, and Haldane's or Fridericia's method for the other, are complicated processes beyond most of us who are not laboratory workers. The apparatus and the technic of Marriott are simple and, if the patient is still rational and co-operative, accurate enough. The details of the test I shall omit. The normal carbon dioxide tension of the alveolar air is 40 to 45 mm. of mercury. Tensions of 40 to 30 indicate mild acidosis; and 20 and below indicate impending coma.

The symptoms of acidosis are few, but they are characteristic and cannot be safely ignored. They demand immediate relief, as coma is in the offing. Fatigue, lassitude and irritability are usually first complained of. These complaints in the diabetic should call for immediate investigation of the possibility of acidosis. Nausea, vomiting and unexplained diarrhea are usually next to develop. Then, as the carbon dioxide tension further falls, a peculiar form of breathing sets in. This is not dyspnea, though on first sight it suggests that term. Breathing, however, is not hurried, is not difficult nor painful; but it is much deeper than normal. This is hyperpnea. It is always a danger signal, but unfortunately it is frequently overlooked or its significance is not realized. Then drowsiness sets in, becomes more marked as hours pass, until finally unconsciousness supervenes. Death almost invariably follows within 48 hours unless the condition is promptly recognized and boldly treated.

Of course, not all coma in diabetics is diabetic coma. But if in emergency there be glycosuria and ketonuria, this fanning, bellows-like breathing, the patient exhibit any degree of lethargy, and a rapid examination and survey of the patient furnishes no other rational explanation of the situation: then, in the interest of the patient's life itself, treatment with insulin should be begun. Promptness in beginning treatment is urgent for, after a certain degree of "cell shock" from acid intoxication has occurred, neither insulin nor anything else will save the patient.

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THE MEDICAL TREATMENT OF DIABETES MELLITUS.*

By J. G. DAVIS, Jr., M. D., Christiansburg, Va.

Recent studies, instead of rendering the management of diabetic cases simpler, have gradually added new phases which are tending strongly to take them from the hands of the busy general practitioner who, by the way must treat about 90 per cent of the cases, and place them in the hands of internists in the larger hospitals. If such is the case, what hope can we give the 90 per cent who for various reasons, financial and otherwise, can never afford the expense of such treatment? It is to this latter phase that I shall attempt to devote most of this brief discussion.

In view of the etiology, diagnosis, etc., which has previously been discussed, the medical treatment of the ordinary case without coma or other severe symptoms is obviously divided into two large classes: dietetic and medicinal.

The Dietetic Treatment

The diagnosis of the disease being definitely determined, the patient, after presentation of himself for treatment, is placed upon a basal maintenance diet which includes the necessary 1 gm. x Kg. of body weight of proteins to take care of the destroyed tissue (for a child this of course should be much higher), and fats and carbohydrates in about their 3-1 ratio. The patient is kept on this diet for about one week, during which time a careful watch is kept on the blood and urine for the per-

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centage of sugar, acetone bodies, etc. If at the end of this period the patient is symptomless, the urine sugar free, and the blood sugar close to normal, we believe that dietary treatment is all that is necessary, except in a few cases which I shall mention later.

The patient is now taught as far as practical to handle his own case. The various food values and a method for determining their caloric value is explained as well as possible. A small balance, alcohol lamp, test tubes and a few ounces of Haynes' or Fehling's solution is all the equipment it is necessary for him to buy. A very useful book that serves as an excellent guide has been written by Dr. E. P. Joslin, and can be purchased from Lea and Febiger, Philadelphia, for the sum of two dollars.

The patient is instructed to at first weigh all of the food he eats; later, after he has learned the approximate household equivalents, he is permitted to guess at the amounts. He is also instructed to examine qualitatively for sugar every voided specimen of urine as far as is practical, and to send a sample of the twenty-four hour specimen to the laboratory once a week at first, and later once a month.

As long as he remains symptomless and the urine sugar free, we offer no further treatment. Joslin estimates that about 75 per cent of all diabetics can be treated successfully in this manner.

The Medicinal Treatment

Until very recently scores of drugs have been tried, recommended, and discarded; among the most used and requiring mention are opium and various alkalies. At one time opium was thought in some way to have a specific action on diabetes, but the works of Joslin, Naunyn, von Noorden, and others proved that whatever action it could have clinically was slight, and then only as a result of very heavy doses. They eliminated it from their routine treatment prior to 1921; so certainly in the light of discoveries since 1921 opium can only be condemned.

Theoretically, a diabetic patient needs alkalies; practically, however, its omission is tended with happier results than its administration. Joslin gives the following reasons for his refusal to use it in any of his cases since 1917. First, the constant use of alkalies appears to promote the constant excretion of acid bodies and often a mild acidosis of months vanishes on the omission of soda. Second, when alkalies are given, large quantities of urine must be voided to remove the salts of the acid. The quantity of liquid which must be ingested is so large as to overburden the stomach and the excretion of so much acid frequently overwhelms the kidneys and they cease to act. Third, alkalies often cause nausea and vomiting, though the instances are fewer when chalk is combined with the soda. Fourth, their administration over long periods may deplete the body salts, such as chlorides, which are distinctly useful, and furthermore set free acid bodies existing combined, quiescent and harmless in the body, and thus do harm. And lastly, thanks to Banting and Best, we have a drug which we know will do all and even more than alkalies could ever do, even theoretically.

Discovery of Insulin

In 1920, Banting conceived the idea that if an extract of the islands of Langerhans could be obtained before the digestive ferments of the acinar portion had destroyed its potency, it would be distinctly useful. His reasons for, plan of procedure and method of manufacture have for the most part just been explained by Dr. Graves. Needless to say that in a few months, with the hearty co-operation of Eli Lilly and Company, a reliable extract of these glands was prepared and can be supplied in sufficient quantities for general use. They named this extract "Insulin," after a previous suggestion of Sir E. Schaefer. The trade name of that prepared by Eli Lilly is "Iletin."

Physiological Action of Insulin

After intensive investigation, the Insulin Committee of the University of Toronto reported the following:

(1) That insulin lowers the blood sugar in normal rabbits, that characteristic symptoms supervene when a certain low level is reached, and that these symptoms are specifically counteracted by glucose.

(2) That it may prevent the hyperglycaemia due to piqure, asphyxia, epinephrin and ether.

(3) That it increases the sugar consumption by the isolated mammalian heart.

(4) That it causes glycogen to be deposited in the liver of diabetic animals fed with sugar.

(5) That it raises the respiratory quotient of diabetic animals fed with sugar.

(6) That it affects the migration of fat in diabetic animals.

(7) That it causes the acetone bodies to disappear from the urine of diabetic animals.

Dosage and Method of Administration of Insulin

At first the unit of insulin was defined as that amount which lowers the percentage of sugar in the blood of a normal 2 Kg. rabbit and starved for twenty-four hours to .045 per cent. Later it was changed to the amount necessary to lower the percentage of a 1 Kg. rabbit to the above figures under the same conditions. And in November, 1923, at which time it was put in the hands of druggists for distribution, it was increased 40 per cent in strength. It is now supplied in three strengths, U-10, U-20 and U-40. The U-10 contains 10 units x cc., and the U-20 contains 20 units x cc., U-40 contains 40 units x cc. All are supplied in 5 cc. ampules.

Numerous attempts to administer insulin by mouth, even when enteric capsules are used, have proved that it is absolutely void of any action when used in this manner. It therefore becomes necessary that every dose be given hypodermatically. This at first appears a great handicap, but when we consider its potency and the alarming symptoms of an overdose, we can readily see the harm that would surely come from careless administration, both by physician and patient, if it could be given orally.

Insulin is now given in from one to four doses per day, depending upon the severity of the case and the preference of the physician. It is best given from five to thirty minutes before meals and, if only one dose is used per day, it is best given before breakfast.

Indications for and Use of Insulin

We will again consider the diagnosis definitely established and the patient free from coma or other symptoms requiring immediate intervention. Upon presentation of himself for treatment, the same procedure as that for the mild case is followed. If, at the end of one week, during which the patient has been given a basal maintenance diet, the urine contains a definite amount of sugar and the blood sugar is still above normal, the use of insulin is begun. The diet at this stage remains unchanged. We prefer to start with three daily injections about twenty minutes before meals, the first injection being only one unit, and increased by one unit per meal until the patient is receiving five units at which time he begins receiving five units per injection and increasing three units per day, that is one unit per injection, until the urine is sugar free and the blood sugar within normal limits. The small dose is used at the beginning because of the individual peculiarities manifested by different patients, no two of which seem to require the same amount to do a like work.

It is when a patient is receiving insulin that the strictest watch must be kept on the diet, urine and blood; even a small variation in the food intake may cause a hypoglycaemia with its imminent danger. Luckily, the treatment of hypoglycaemia is simple and easy, and can usually be carried out by the patient himself. Every patient is taught the warning symptoms, which include (1) sense of impending danger, (2) sudden nervousness and hunger, (3) sweating and tremor, (4) subconsciousness. And no patient is allowed ever to be without a piece of candy, orange or some other rich form of carbohydrate, because if taken early this is all that is necessary. If by chance the patient has failed to eat any sweets and is not seen until unconsciousness has intervened, epinephrin or glucose intravenously may be given at once.

The question now arises, how long must a patient use insulin? And does it have any curative action on diabetes? The last question is answered by the physiological action of the drug: it does nothing but supply for a few hours after each injection the hormone that a diseased pancreas is failing to produce in sufficient quantities for the metabolic needs of the body. The question of whether or not the support that it lends will enable nature to rebuild worn out portions of the pancreas is as yet unsettled. Our own limited experience would tend to give hope that such is possible as all of our cases have been able to reduce their dose in a few months and several who took as high as fifteen to twenty units per day are now keeping "sugar free" with dietary measures alone.

Acidosis in Diabetes

The whole treatment of diabetes, both dietary and with insulin, is based on the prevention of acidosis. If the patient does not have any other illness and keeps his diet "balanced," and his urine sugar-free, there is very little danger

of acidosis. It is when other sickness intervenes or carelessness is practiced with the diet that the trouble comes. It is with this in view that all patients are given the following written instructions:

Whenever ill from any cause:

(1) Go to bed,

(2) Keep warm,

(3) Take a glass of hot water, tea, broth, orange juice, or oatmeal water gruel every hour.

(4) Empty the bowels with an enema.

(5) Call a physician.

By following the above rules coma can nearly always be prevented.

Treatment of Diabetic Coma

If the patient is not seen until in a comatose condition, the following procedure is carried out: (1) An initial dose of twenty units of insulin is given intravenously. This is repeated hourly whenever necessary and, if much is given, glucose is also added in the same method; (2) The patient is provided with a special nurse (if possible one trained in diabetic work); (3) He is kept warm with artificial heat; (4) The bowels are opened by one or more enemata (cathartics should be avoided, as they are apt to cause diarrhea in a diabetic); (5) Liquids are given at the rate of 1,000 cc. every six hours; (6) The patient is given 1 gm. carbohydrates per Kgm. body weight every twenty-four hours. This is usually given in the form of orange juice; (7) The circulation is sustained with digitalis and caffein; (8) No alkalies are given. If they have been given previously, they are omitted at the rate of 30 gm. per day.

SURGICAL TREATMENT OF DIABETES.*

By HUGH H. TROUT, M. D., Roanoke, Va.

When I was informed I had to present a paper on the surgical treatment of diabetes, I naturally concluded that what was really wanted of me was to comment on the surgical treatment of the complications arising during the life of a diabetic. Of course, we all realize there is no true surgical treatment of diabetes except the prophylactic treatment of conditions which might bear some relation to the causative condition, such as diseases of the biliary tract, or possibly some focal point of infection.

*Read as part of symposium on Diabetes, at the meeting of the Southwestern Virginia Medical Society in Radford, March 20-21, 1924.

Before treating any disease it is most essential a correct diagnosis be made, and, with diabetes mellitus, this is not always as easy and certain as some authors would have us believe. For example, Lichty and Woods, Pittsburgh, Pa., in the *American Journal of the Medical Sciences*, January, 1924, reported twenty-five (25) cases of glycosuria complicating biliary tract disease. The total number of cases of gall-bladder and duct disease observed during the same period was 1,474, of which 431 were verified at operation or autopsy. Out of the 25 cases of glycosuria associated with biliary tract disease, 14 were definitely diabetes mellitus according to symptoms, blood, urine tests, etc., while the remaining eleven (11) ceased to show sugar in the urine after the correction of the biliary disease. Out of the fourteen (14) definite diabetes mellitus cases, three (3) were apparently permanently completely cured by the application of corrective surgery to the gall-bladder and ducts. The remaining eleven (11) cases seemed to be more easily controlled by medical and dietetic treatment than they had been previous to their surgical experiences.

In our own personal experience we have not seen any case, which we diagnosed definitely as diabetes mellitus, cured by any operation on the biliary tract, though we have, like many other surgeons, seen sugar disappear from the urine following operations not only on the biliary tract but also on many other organs. Perhaps the most frequent mistaken diagnosis of diabetes mellitus we surgeons see is that of a patient having a large carbuncle associated with a trace of sugar in the urine and an increased amount of blood sugar. After the excision and cure of the carbuncle a large percentage of these cases show a decrease in the blood sugar and a disappearance of the sugar from the urine. Some throat men have reported similar experience following tonsillectomies.

None of these clinical observations should cause much surprise, for a very cursory review of the evolutionary steps which lead up to making the brilliant work of Banting and others possible suffices to show the relationship between the islands of Langerhans to both near and remote structures. Even back as far as 1899, Lancereaux wrote of the association between biliary and pancreatic disease, while Opie in 1901 proved both by animal experi-

mentation and clinical observation such a relationship. One can understand how easily bile can be backed up in the pancreas through the ducts of Wirsung, due to some pathological condition existing in the common duct. It is almost hard to explain why injury to the islands of Langerhans does not occur more frequently, provided this blockage takes place as often as many of us believe it does. It is possible this does not occur more frequently due to the fact that "the proportion of the isles of Langerhans to the external secreting tissues increases in a very definite ratio toward the tail of the pancreas," and, therefore, the result of the damming back, effects the head of the organ first, causing primarily the symptoms of an acute or chronic pancreatitis and only late producing the picture of diabetes mellitus. Of course, the isles of Langerhans are not supposed to have any connection with the external secretion of the gland, but it is not unreasonable to picture an inflammatory process breaking down any such barrier.

In these days when we are all ascribing first one pain and then another, as well as disease, to some focal point of infection, it would indeed be odd were we to omit the pancreas from the list, and, particularly strange at the present time, when most every issue of our medical journals contains some article on diabetes mellitus.

The three conclusions of the article by Lichty and Woods are most timely and well worth quoting:

"(1) On account of the possibility of gall-bladder and duct disease being later complicated by diabetes mellitus, and, on account of the conceded increased danger of operation after such a complication has occurred, there is an added indication for prompt surgery in all biliary tract diseases:

"(2) On account of the apparent cure of diabetes mellitus (a heretofore supposedly incurable disease) as found in our limited experiences, we believe a certain operative risk is justifiable in cases of diabetes mellitus giving reasonable evidence of gall-bladder and duct disease:

"(3) The urine and blood should receive a more careful and purposeful study in all cases of suspected gall-bladder and duct disease."

After the diagnosis has been correctly and definitely made and a surgical complication arises, the management of that patient becomes a dual responsibility between the medical man and the surgeon; provided, of course, circumstances are such that one physician is not forced to act in both capacities. This relationship of internist and surgeon is so important (and, at times, so infrequent) as to call forth an editorial on this one point only. This editorial appeared in the February issue of *Surgery, Gynecology and Obstetrics* and was written by Dr. Walter M. Boothby, of Rochester, Minn. He calls attention to the danger of the medical and surgical services being so far separated as not to have the close co-operation so essential in the proper pre- and post-operative care of the diabetic. He stresses the point there should be no interruption in the expert medical supervision. In Joslin's monograph there has been shown a steady decrease in the mortality rate following surgery in cases of diabetes and this is due largely to co-operation of the internist, with his insulin and diet, and the surgeon, with his eagerness to have the aid of the physician who has been treating the case. By such means the mortality rate has been reduced from about 30 per cent in 1918 to about 3 per cent in most clinics in 1923, while Wilder and Adams, of the Mayo Clinic, report as low as 1.2 per cent in 251 operations done on diabetic patients; 83 of these were intra-peritoneal operations with a mortality of 3.6 per cent.

Like operations on normal individuals, operations on diabetics are to be divided into two great classes, namely, those of necessity and those of election.

Operations of necessity include those complications such as diabetic gangrene, which are produced by the disease itself as well as those acute surgical emergencies such as perforation of the stomach, which are incident to the daily routine of most of our hospitals. Joslin, as well as most other authorities both medical and surgical, advocates immediate operation to meet such crises. All stress the point that delay, in hope of improving the patient's condition by the use of insulin, etc., is both dangerous and ineffectual, and especially is this true in those cases in which the complication is due to the diabetes *per se*. As an illustration, presume we were treating a case of "moist" diabetic gangrene of some extremity. It is far better to amputate immediately by the use of block anaesthesia, than it is to wait for improvement from insulin, for all during

the period of treatment the patient is absorbing toxic products from the extremity and is forced to carry this additional load while being treated for the diabetes. The "dry" gangrene does not require such emergency methods being employed.

In operations of election, where delay is not too dangerous, the reverse is true and time should be taken to bring the patient to the best possible condition. This is best accomplished by the proper diet and the use of insulin, etc., in the hands of one well versed in the employment of such agencies. One point not to be forgotten that is sometimes overlooked, unless there is the closest co-operation between the internist and the surgeon, is, due to the absence of breakfast before operation, glucose should be given by rectum in proper amount, as well as the usual dose of insulin employed, to compensate for the missed meal. This is also to be continued after the operation until the patient is on proper diet.

The diabetic patient requires large quantities of water post-operatively and, if such can not be given by mouth, it should be forced either by rectum or given subcutaneously and, even intravenously, if demanded.

It is also important before operating on a diabetic to be certain there is an ample supply of insulin on hand to meet any emergency which the internist might find from the frequent post-operative examinations of the urine and occasional test of the blood sugar.

Having reached the decision to operate, naturally the first question to arise is the choice of the anaesthetic. Of course, where one can use successfully local anaesthesia without physic shock, such should be employed, not only by means of the infiltration and "field block" methods, but also by the nerve block such as the regional anaesthesia given into the sacral hiatus and foramina. This last is particularly applicable to prostatectomies, gynecological and rectal operations.

Of the general anaesthetics, Luckhardt has shown that ethylene with oxygen is not only the safest in diabetics but this gas does not, even after prolonged anaesthesia, lead to an albuminuria or a glycosuria, which can not be said of any other general anaesthetic. In the employment of this comparatively new anaesthetic, one point must be borne in mind and that is the gas is highly explosive, and a cautery, such as is often employed in the excision of carbuncles, can not be used.

If ethylene is not obtainable, then nitrous oxide and oxygen is the next best though, for complete relaxation, the addition of a little ether is often required with this latter gas.

Chloroform should never be given to a diabetic, for it increases markedly not only the blood sugar, but also produces liver changes which are especially dangerous in this class of cases.

The chronic or inexperienced surgeon has no place in this field of surgery, but, on the other hand, due to the careful work of a modern internist, undue haste is no longer excusable in the surgery on diabetics.

Jefferson Hospital.

THE TREATMENT FOR RESISTANT CONGENITAL CLUB-FOOT.

By PAUL C. COLONNA, M. D., New York, N. Y.

The treatment for congenital equinovarus may be conservative or operative, but in the older and more resistant cases a combination of these procedures is most satisfactory. In infancy, club-feet properly treated, yield uniformly good results, but in the older patients the structures become increasingly resistant to manipulation and one is compelled to sacrifice to a varying degree, the function to the form of the foot. The tissues in untreated or improperly treated club-feet, which the orthopedic surgeon sees in older children and occasionally even in adults, have undergone very definite and marked changes—all the component parts of the foot entering into the deformity.

The earliest change and one of the most difficult to correct is that which occurs in the plantar fascia and ligaments of the foot, especially the ligaments binding the scaphoid, os calcis and internal malleolus to one another. The extrinsic musculature of the foot, most marked in the tibialis anticus, tibialis posticus, gastrocnemius and soleus muscles, show atrophy and shortening while all the intrinsic muscles show these changes in a more marked degree. The astragalus and os calcis present the greatest bony change, the former becoming thicker along the external border, somewhat wedge-shaped from without in and plantar flexed, so that a large part of its body may protrude between the malleoli. The neck of the astragalus is longer than normal, depressed and deflected inwards. The os calcis also is in an attitude of plantar flexion, the internal

tuberosity being drawn upward towards the vicinity of the internal malleolus, the anterior extremity looking downward and inward.

Fig. 1—One view before operation.

The treatment of resistant club-foot must fundamentally be an operation on the skeletal structure of the foot. For the extremely severe type, the so-called "reel foot," an astraglalectomy with backward displacement of the foot is often most satisfactory. At the Hospital for the Ruptured and Crippled, the majority of the resistant cases have been treated by tarsectomy, following somewhat the procedure practiced many years ago by English surgeons, which was slightly modified and fully described by Cook in 1916. During the four year period from 1920 to 1923 inclusive, this mode of correction was done on the Second Orthopedic Division in 22 cases of congenital equinovarus. The age at operation ranged from 3½ years of age to 27, the case here reported being the oldest in the series.

The procedure followed for a cuneiform tarsectomy is briefly as follows: The usual pre-operative preparation is done and, after the patient is under anaesthesia, a tourniquet is applied just above the knee. The plantar tissues are subcutaneously divided if they are found contracted. The foot is manually brought into as much correction as possible, after which a vertical skin incision just in front of the external malleolus is made. The peroneal tendons are usually atrophied to such an extent as to be useless and in these cases

Fig. 2—Another view before operation.

they are sectioned and no attempt made to re-unite them. With a wide blade osteotome, a large wedge with base outward, is removed, cutting *completely* across the foot. This wedge is taken from the astragalus, os calcis, cuboid and, if necessary, the scaphoid *en masse* and should be of sufficient size to correct the deformity. If the heel-cord needs lengthening, an open zig-zag tenotomy is done, which is considered preferable to the closed subcutaneous method. The foot is then placed in the corrected position of very slight calcaneo-valgus, wounds closed, cotton wadding and plaster of Paris applied from the toes to the knee, care being taken to elevate the anterior part of the outer border of the foot by a quarter turn when the plaster is applied. This quarter turn aids greatly in preventing a recurrence of the varus deformity. The patient in a few weeks is allowed to walk on the plaster and in six to eight weeks after the operation is fitted with an ordinary shoe which has had the outer border of the sole raised slightly.

Occasionally there is a knock knee deformity accompanying the club-foot condition which should be corrected and also a torsion of the shaft of the tibia which, as Geist has pointed out, should be treated by osteotomy.

Case—J. D., a man, aged 27, entered the office in May, 1923, on account of deformities of both feet. Examination was negative with the exception of the bilateral equinovarus deformity for which the patient was wearing short, double, upright supporting braces. Examination of the feet showed a severe type of equinovarus, the patient walking on the outer surfaces of the feet and the third, fourth and

fifth toes flexed and contracted. What would have been the sole of the foot was soft, bore none of the weight in walking and presented no contracture of the plantar fascia. There

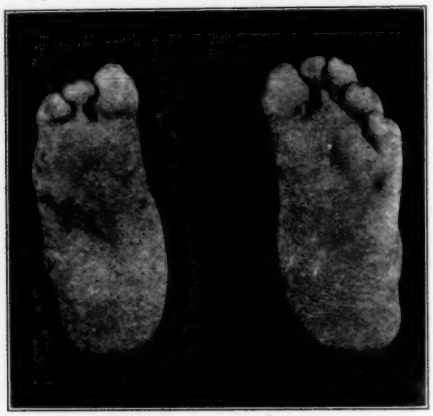

Fig. 3—One view after operation.

was only slight motion in either ankle joint and apparently no activity of practical value remained in the tibialis posticus or peroneals. The patient was admitted to the Hospital for the Ruptured and Crippled.

On June 7th, under ether anaesthesia, both feet were stretched and plaster of Paris ap-

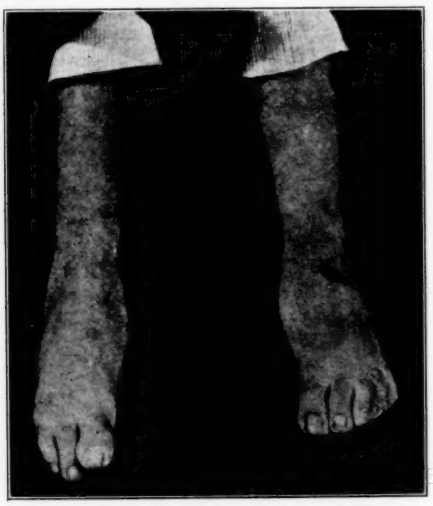

Fig. 4—Another view after operation.

plied with feet in as much correction as possible and, on June 14th, a cuneiform tarsectomy was done on the right foot and new plaster applied to the left. Following this the toes on the right foot became swollen and either on account of circulatory disturbance resulting from the tarsectomy or too tight plaster, it was necessary to amputate the fourth and fifth toes on the right. The wound healed rapidly and in the latter part of July the patient was discharged with both feet in plaster, and walking with the aid of crutches. On September 20th, he returned and cuneiform tarsectomy was done on the left foot and in October the patient was discharged from hospital wearing ordinary shoe on the right foot and light posterior plaster splint on the left. A few weeks later an ordinary shoe was fitted on the left foot and figures 3 and 4 show corrected position of feet which enabled the patient to wear an ordinary type of shoe.

Summary

1. With the untreated or poorly treated cases of congenital equinavarus, as seen in the adolescent or adult, a cuneiform tarsectomy has been the procedure of choice at the Hospital for Ruptured and Crippled.

2. Following the details outlined above, the results in these cases have been most satisfactory.

3. The technique of the operation is simple, the most important points being, first to remove a wedge of sufficient size and secondly, to elevate the outer border of the sole of the foot when applying the plaster.

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TENDON GANGLIA WITH REPORT OF AN UNUSUAL CASE.*

By E. L. KENDIG, M. D., Victoria, Va.

Tendon ganglia are considered harmless. Consequently the subject does not occupy much space in medical or surgical literature.

I take the liberty of discussing so common and so minor an ailment at this time from the fact that, although frequent and considered more or less harmless, this condition sometimes presents a problem of diagnosis and treatment.

A ganglion may vary in size from a pea to a walnut. They have their origin from connective tissue and are usually found adherent

*Read before the Southside Virginia Medical Association at Suffolk, Virginia, March 11, 1924.

to a tendon sheath. Franz reports a case where the ganglion was found in the substance of the tendon and refers also to four other such cases found in medical literature. They have been known to occur in a muscle. Borchurat reports a case occurring in the biceps and Morestin found one located on the semitendinosus.

Tendon ganglia are most usually seen on the dorsal-carpal region, although they are often found on the dorsum of the foot and the palmar surface of the hand. Cases have been reported where they occurred on the external semilunar cartilage of the knee, the capsular ligaments of certain joints, and the hamstring muscle upon each side of the popliteal space. Hoffman tells of a case occurring on the tendon of the peroneus tertius muscle.

Tendon ganglia are cystic tumors consisting of a connective tissue capsule and containing a clear or straw-colored jelly-like material. The research work of Ledderhose, Thorn, Franz, and others showed that a tendon ganglion is the product of a connective tissue degeneration, having its origin probably in some strain or injury of the tendon. The degeneration occurs in the central part of the tumor and, as the growth enlarges, a cyst is formed. The cyst is multilocular at first, later becoming monolocular through the process of degeneration. Tendon ganglia may grow to a certain size and then remain stationary. They have been known to entirely disappear if left alone. The usual symptoms found are the presence of a tumor of variable size, sometimes pain, and occasionally a weakness of the affected tendon or muscle.

If the tumor is superficial, recognition by palpation is easy. If it occurs in the deep tissues, although this is rare, recognition by palpation is more difficult. On account of its attachment to the tendon sheath, the tumor can usually be moved laterally but not longitudinally. The pain present will depend on the location and the pressure of the tumor on the surrounding parts. The weakness of the involved muscle, when present, is due very largely to a partial or slight dysfunction.

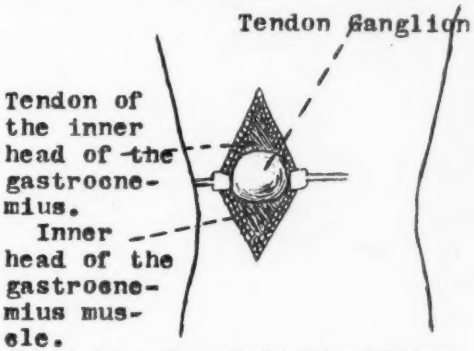
Binnie says that those cases, which cause neither deformity nor annoyance, should be treated with contempt. A very large number of tendon ganglia do not cause deformity or annoyance, and in such cases this is unquestionably the best course to follow. When, however, there is annoyance or deformity the patient will demand relief.

Many of these tumors in the past have been dispersed by striking them with a book, thereby rupturing the sac into the surrounding tissue. This is rather an inaccurate surgical procedure. The cyst may be punctured with a tenotome and in that way the contents evacuated. Some surgeons inject iodoform or iodine into the sac after evacuation. A large number of ganglia treated by these methods will ultimately return. Clowes reports success by slowly injecting with a hypodermic syringe into the sac one c.c. or more of fibrolysin. The best method of treatment is complete aseptic excision. This can usually be done under local anesthesia.

I shall report a rather unusual case of tendon ganglion. The case was referred to us on the 18th of last December by a physician of Nottoway County. The patient was a large muscular man, 38 years of age. He gave a history of having, in the summer of 1922, fired heavy engines on the railroad which were not equipped with stokers. After a few months of this strenuous work, he felt an annoying pain in the right popliteal space, which was greater when using the leg. Later he experienced some weakness in the leg and could feel a very slight enlargement behind and just below the knee. The condition became more annoying, and he had to stop work.

On palpation, we could make out the slight enlargement in the popliteal space just below the knee and to the inner side of the tendon of the semitendinosus.

On account of the muscular development of the patient and the large amount of superficial fascia in this area, nothing more definite could



Large tendon ganglion on the flat tendon of the inner head of the gastrocnemius muscle.

be obtained from the examination. Under local anesthesia an incision was made over the enlargement about two inches long just inside the tendon of the semitendinosus. Much to our

surprise, when the tumor was exposed, it proved to be very much larger than we calculated from the examination. It was as large as a walnut and was densely adherent to the sheath of the flat tendon of the innerhead of the gastrocnemius muscle. The tumor was dissected free from the tendon and the wound closed with fine catgut.

Laboratory examination of the tumor showed it to be a tendon ganglion about 4 centimeters in diameter. It was a monolocular cyst with a connective tissue capsule 1 centimeter in thickness, and contained a jelly-like colloid material. Letters, within the last few days from the physician who referred the case and from the patient, report a good recovery and complete relief from the symptoms.

This location of the ganglion was unusual. The depth of the tendon under the superficial fascia made the examination difficult.

Under these conditions, the diagnosis, before excision, was very uncertain and this, together with the rarity of a ganglion on the head of the gastrocnemius, prompted this article.

As a summary I wish to mention the three points I considered worth while in writing this paper:

(1) Tendon ganglia, although not serious, are very common. As they are considered more or less harmless, the condition is seldom discussed. It is a fact, however, that they may cause trouble, and a discussion here of tendon ganglia would not be without value.

(2) I desired to report the large tendon ganglion found on the flat tendon of the inner head of the gastrocnemius muscle.

(3) The possible presence of a tendon ganglion causing an aggravating and annoying muscular or tendon symptomatology should not be overlooked.

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HOW CAN THIS WOMAN BEST BE DELIVERED?*

By C. J. ANDREWS, M. D., F. A. C. S., Norfolk, Virginia.

A considerable majority of labors will terminate spontaneously without any particular mechanical assistance. While this fact has been most fortunate for the development of the human race, there is a considerable number who have suffered severely on account of it. There are, at least, several ways by which this seemingly good prognosis results in misfortune for the minority.

So far as the individual is concerned, pregnancy and labor are often regarded as of minor importance. As one evidence of this may be cited the low comparative value placed upon the services of the doctor who delivers them. It is a matter of common knowledge that the average patient will willingly pay more for a simple appendix operation than for the most difficult labor. This often results in the labor being planned on the cheapest plan possible, and, to some extent, is responsible for the midwife problem.

The fact that so many women pass through pregnancy and labor without any recognized untoward event is, no doubt, responsible for the attitude of the general public to this question. Probably very few know that childbirth as the cause of death ranks with tuberculosis and heart disease. About fifteen or twenty thousand die yearly in the United States from this cause. In the City of Norfolk last year thirty-one women died in childbirth. This country has the worst record in regard to puerperal mortality of all civilized countries except Spain and Belgium. The loss of infants as still births and during the first days of life is also notoriously high. In this city last year there were one hundred and thirty-six who died in the first month of life. The record here, however, no doubt compares favorably with other localities. It is impossible, of course, to get any

*Read before the Norfolk County Medical Society, March 24th, 1924.

figures on the morbidity, so far as the general public is concerned, but we know that morbidity and disability due to accidents of pregnancy and labor are very great. It is also known that nearly all these deaths and a considerable amount of morbidity are avoidable. The economic loss to the country from these causes can scarcely be over estimated. If these things were known and appreciated, the public, if properly directed, would possibly go far toward securing relief.

The Shepherd-Towner Bill was intended for this purpose, but for many reasons has, even where placed in operation, fallen far short of the mark. The mistake seems to have been made of planning to remedy this condition outside of the medical profession. It will not be done.

It is, at least, interesting to speculate on the possible means of attacking this problem. Using our city as an example, it is evident that the larger percentage of loss is among the negroes and poorer whites. At present we are not prepared to give these any considerable help. Labor cases among the city poor have always been a source of embarrassment to the Health Department, as they were not prepared to give help except it be an operative case, which must be admitted to the hospital.

An organized clinic employing doctors who are recent hospital graduates, especially those who wish to make obstetrics a specialty, under the direction of more experienced men and with ample hospital facilities, both for the operative and abnormal cases, at least, would attack this problem at a vital point. This would cost considerable money, but so do many other things less valuable. This plan might have some valuable by-products. It has been said that the teaching of obstetrics is inefficient. No doubt it is, but granted that a student has had the best available college training with internship in a general and maternity hospital, he will not develop unless he has work to do and some means of support. These being supplied and, in addition, virtual apprenticeship under those of more mature experience, we could with confidence expect a tremendous increase in the efficiency of the obstetrician of the future, and certainly a great waste would be avoided.

It is possible also for the doctor to be a victim of too great confidence in the favorable prognosis. It may be predicted with reasonable accuracy that any one who attends obstetric cases, no matter what his training or experience, will encounter more than one case which will give him great anxiety, and about which, when the case is finished, he will have serious doubts as to whether the patient has been handled in the best possible manner.

I regret to say that I have nothing new to offer any one in this dilemna. It may, however, be well for us to take stock occasionally of some of the available methods and procedures. It is highly desirable that a woman have every care during pregnancy and puerperium, but whether she has this or not, she must be delivered.

Disproportion Between the Size of the Fetus and Pelvis

Management of this condition begins during pregnancy with measurement of the pelvis. It is needless to say that any case might fall within this class, and consequently every case should be carefully measured. All measurements of the pelvis should be recorded, but the diagonal conjugate, from which the true conjugate is estimated, and the bi-ischial are most important. If the degree of contraction is found to be absolute the problem is simple. Cesarean section is planned. Such conditions are very uncommon in native born Americans. It is often found in the colored race.

The measurement of the diagonal conjugate does not settle the question of competency of the inlet. A pelvis having a normal diagonal conjugate, and having an abnormal slant of the plane of inlet may not only have the true conjugate reduced, but the promontory may be so far forward that the head will necessarily over-ride and engagement be difficult or impossible. These cases are particularly dangerous, as they are not so easily recognized, and undue attempts at pelvic delivery may be made.

Williams found contraction of outlet to constitute forty-four per cent of all pelvic deformities. He places in this class all pelves having a transverse diameter of 8 cm. or less. If this is found it is necessary to measure the posterior sagittal diameter. The prospects of delivery will depend upon the relationship of these two diameters. If the transverse is short a posterior sagittal long enough to compensate delivery may be accomplished, but probably with more or less injury to the soft parts. He has devised a very ingenious scale to show this relationship.

If the measurements show the case to be borderline, the real problem is presented. The size

of the baby may usually be somewhat limited by limiting the diet of the mother. The effect of the diet is checked by the mother's weight regularly recorded. When the baby is within a few weeks of maturity, castor oil and quinine are given, and if labor is started in this way the test of labor is accomplished. Measurement of the fetus at regular intervals is helpful. Not only can the degree of maturity be estimated with reasonable certainty, but the prospects of delivery be considered. The occipito-frontal can be very accurately measured by pelvimeter. This is very easy in unengaged cases, and these are the ones which need it most. From the occipito-frontal the bi-parietal may be estimated by deducting 2½ cm. from the occipito-frontal, that is, if the occipito-frontal happens to be normal, or about 12 cm. Recently it has been shown that this does not hold strictly true for other diameters, and a table has been given by which exact measurements may be estimated.

McDonald states that he has never seen a woman normally delivered where bi-parietal diameter of fetus was greater than the true conjugate. McDonald's method of measuring the length of the fetus is very accurate. This, however, requires a vaginal examination, and, therefore, is not routinely used.

The height of fundus at full term is about 27 cm. measured with calipers. With the tape it may be 33 or 35 cm. Usually in measurements of this kind the baby will be found to be of average side, that is, 50 to 52 cm. long. After castor oil and quinine have been tried, if labor is not started but the head is engaged in the pelvis, we may either wait or consider induction of labor by gauze pack or bag. Some use pituitrin in small doses for this purpose. If the head still over-rides the pubis, waiting is necessary. After a time we repeat attempts to induce labor with castor oil. When labor does not begin the case is managed just as if we expected to do a Cesarean. No vaginal examinations are made. For the painful first stage morphine and atropine are given hypodermatically. If the patient does not take food freely and the case is prolonged, glucose is given by rectum.

Rucker believes the glucose to be oxytocic. It certainly does furnish fuel and helps to keep up the strength of the patient. When the os is fully dilated the membranes are ruptured under the most careful technique as to asepsis. The use of gas oxygen analgesia in the second stage will promote comfort and make possible a more thorough test of labor. It does not retard the uterine contractions as do ether and chloroform. The patient is not considered to have had a fair test of labor until she has had several hours with the os fully dilated and the membranes ruptured. During this time it is particularly necessary to frequently observe the character of the fetal heart. Any considerable slowing of the fetal heart is a danger sign. Any increase in the rapidity of the mother's pulse is a sign of exhaustion on her part. The most of these cases at least progress to a medium, or even low forceps, and many are delivered spontaneously. If the head, instead of entering the pelvis during this test of labor, continues unengaged, Cesarean is necessary. If the case has been managed successfully, either a low flap Cesarean or a classical may be done, but in all cases in which a test of labor has been given, the low flap cervical Cesarean is safer.

The management of over-term or over-size fetus is the same. Very little dependence can be placed in the history, but by careful measurement one can be reasonably sure of the development.

Version is not usually a successful treatment for these cases. Potter does not do a version in any case where the head cannot be made to enter the pelvis. As he does a Cesarean for about one in every twelve patients delivered, we would infer that he does not use version for cases expected to be difficult.

The neglected cases may call for craniotomy or pubiotomy or Cesarean with hysterectomy. Mendenhall considers the indication for craniotomy to be difficult delivery with a dead baby and with a conjugate of more than five or six cm., possibly some severely infected case with a weak baby and difficult labor.

Arthur H. Bill advocates pubiotomy for certain breech cases where one has failed to correctly estimate the size of the after-coming head. He feels that pubiotomy does not compete with Cesarean section, but it is in competition with craniotomy. Williams has recommended pubiotomy when the head is arrested in the pelvis with contracted outlet. Pubiotomy is at present used by very few obstetricians.

Malpositions

Harper believes that posterior positions are about as frequent as anterior. Of course, most of these rotate if labor is conducted successfully and the patient given plenty of time.

The location of the heart sounds does not always indicate the position of the back. If the back and small parts can be located the diagnosis is satisfactory. Posterior position cases do not usually begin labor so promptly as normal cases, and in this way we may have an over-time fetus and posterior position combined. This is not a very infrequent occurrence. If the diagnosis of posterior position is made before labor begins, the patient is advised to lie on the side opposite to that occupied by the back. This will encourage a change of position. During the first stage of labor this may also be helpful. Those which require help may be treated in several ways. Pushing the head out of the pelvis, rotating with the hand and making it engage with forceps may be used, or it may be rotated with forceps and delivered. The important thing here is to see that it is rotated before delivery is attempted, and to make a cephalic application. If necessary introduce the hand into the vaginal tract and satisfy yourself of the exact condition before anything is done. Particularly see that the cervix is fully dilated. Version has served me well in several difficult posterior cases. While I think very few people agree with Potter as to indication of version, I believe most of those who are familiar with Potter's work think very highly of the method of version which he uses. To me it has been most helpful.

Face presentations may be treated by pushing the head up and correcting position manually and making head engage correctly with forceps, then leaving the delivery to nature. I have succeeded in this once. Some face cases are delivered spontaneously, provided the chin rotates anteriorly. Some arrested face cases may be delivered by forceps with chin anteriorly, but this is usually difficult. If we are reasonably sure that there is no disproportion between the size of the head and pelvis, version is probably the safest way to manage the difficult face cases. The same rule applies here as elsewhere. If the head does not engage do not use forceps or version, but do a Cesarean.

512 *Taylor Building.*

SOME CONSIDERATIONS OF CHRONIC CONSTIPATION.*

By J. E. MARABLE, M. D., Newport News, Virginia.

The subject is an old one. I have no doubt that long before Mother Eve discovered a use for the leaves of *Ficus Carica* she was driven by necessity to use its fruit for a more urgent, if less aesthetic, purpose. Certainly a perusal of the Pharmacopeia would lead us to believe that man turned early to the vegetable kingdom for pharmacological relief from what must have been a very ancient evil. From beginning to end, the Ninth Pharmacopeia, which itself has undergone considerable purgation, contains forty odd, separate and distinct drugs that claim the various titles of laxative, carthartic, purgative. And this number does not include the many variations of each drug, such as extracts, fluid extracts, infusions, mixtures, pills, powders and the host of proprietary modifications that delude the laity and enrich manufacturers and vendors of patent medicines. And the tragic part of it—a momentous fact that does not appear in the Pharmacopeia nor on the labels of nostrums—is that they have nearly all caused more constipation than they have cured.

By constipation is understood that condition in which there is insufficient fecal evacuation. This insufficiency may relate to the quantity evacuated or to the frequency of evacuations. Some individuals may have a bowel movement every day and still be constipated; others may have an evacuation every second or even every third day and apparently suffer no inconvenience nor discomfort from such a state of affairs. Evidently, the physiological normal is very variable.

In the great majority of cases, habitual constipation is purely a functional disorder, and in nearly all of these it is an acquired condition, due to faulty habits. The conditions of modern life have a powerful influence on increasing the number of those suffering from chronic constipation. The refinement of many of our foods, the decreased ingestion of water, the convenience and popularity of motor transportation, the tendency to drift to cities where there is lessened bodily exercise, have all contributed to the development of constipation. The repeated failure to obey promptly the desire to defecate results in a blunting of the sensitiveness of the nerve terminals of the sigmoid and rectum and, if continued, the normal desire departs. The individual then, if left to his down devices, turns to laxative drugs for relief. These by over-stimulation and irritation raise the threshold at which intestinal stimulation is received and must be increased constantly in quantity or varied in strength.

*Read before the Walter Reed Medical Society, May 2, 1923.

The individual becomes convinced that he or she must "take something every night" and a vicious circle both physical and psychological is set up. In adults, business and social activities and frequently a false sense of modesty are allowed to dictate a postponement of Nature's demands; in children, school activities and the desire for uninterrupted amusement are frequently allowed to interfere. Nature's desire for defecation at a regular time is dulled and when the desire becomes sufficiently irregular, instead of trying to restore physiological action by return to hygienic habits, the individual attempts to assist Nature by using cathartics, with the result that each dose aggravates the condition it is intended to relieve.

Irregularity in time of going to stool is a frequent cause of chronic constipation. The nervous mechanism by which the intestinal movements are controlled has not been definitely determined, but the preponderance of evidence shows that the peristaltic movements are due to direct stimulation of the terminals of the intrinsic nerves, while the rhythmic movements are probably due to contractions of the circular muscle fibers directly stimulated through food distention. These movements are automatic and this activity is only controlled by the extrinsic nerves. The vagus probably carries both motor and inhibitory fibers while the sympathetic chain supplies inhibitory fibers only. It is reasonable to suppose that if this mechanism and the nervous mechanism controlling the two sphincters are trained to a systematic habit of eliminating waste material at a certain time each day, they are much more likely to properly fulfil this function than if the individual relegates the function to a haphazard time or one of convenience.

Constipation is generally divided into three groups: (1) Atonic, or that due to retarded intestinal peristalsis; (2) Spastic, or that due to spasmodic contraction of certain portions of the gut; and (3) That variety of constipation which is dependent upon, or due to, pathological conditions in organs other than the intestine itself. In group one, or those suffering from atonic constipation, we find a large majority of those who have habitually neglected to respond to the normal physiological desire. Also those individuals with exhaustion or weakening of the general nervous system from whatever cause are apt to fall in this class. There is nearly always a certain amount of dilatation of some portion of the large bowel with some degree of fecal stasis. Before roentgenological study of the gastro-intestinal tract became the every day procedure that it is now, atonic constipation was considered to comprise the vast majority of all cases. Now it is contended that the spastic variety is more frequent. This form of constipation is due to over-stimulation and irritation of portions of the mucous membrane, giving rise to hypersensitive areas. When these areas are irritated or stimulated, spasmodic contractions, with consequent peristaltic delay, occur at these points.

Another, and not infrequent cause of constipation, is spasm of the anal sphincters. This condition, when correctly diagnosed, is readily amenable to local treatment.

Constipation due to diseases of other organs is very common. Many acute febrile diseases are accompanied by a serious degree of constipation and there is no doubt that over-vigorous attempts on the part of both patient and physician to overcome the constipation sometimes lead to chronic constipation. The frequently obstinate constipation that accompanies chronic disease of the appendix and gall-bladder is familiar to all of us. Diseases of the lungs, heart, liver and kidneys are usually accompanied by more or less constipation. In these conditions the constipation is due to engorgement of the portal circulation and a hyperemia of the intestinal mucosa.

Recently there has been a popular advocation of bran and other coarse foods for the relief of intestinal stasis. Many of these foods have had professional indorsement but the pendulum is now swinging back and some authors are maintaining that an excess of very coarse food substances acts very frequently like the continued use of cathartics and, by irritating the mucosa, gives rise to spastic constipation. A diet that leaves a moderate residual bulk is desirable but a residuum that is very irritating is not.

With the view of determining in concrete figures the prevalence of constipation, I have reviewed 490 consecutive case histories. These histories were prepared by the internist, Dr. L. E. Stubbs, who courteously placed them at my disposal. They represent a variety of conditions and embrace a wide range of diagnoses. Considered as a whole they represent a more or less accurate cross section of human exist-

ence in this and the surrounding territory. The collection is made up principally of white adults and for this reason the figures bearing on the occurrence of constipation in negroes and children may not conform with those based on larger numbers of these individuals.

Of the 490 cases there are 249 white males and 10 male negroes. There are 226 white females and 5 female negroes. There are 28 cases under the age of ten years; 50 between ten and twenty years; 118 between twenty and thirty; 114 between thirty and forty; 74 between forty and fifty; 66 between fifty and sixty; 35 between sixty and seventy; 7 between seventy and eighty; and 3 between eighty and ninety years. Of the total 242, or 49.4 per cent show some degree of constipation. Of the 259 men, 111, or 43 per cent. are constipated; of the 231 women, 131, or 57 per cent, are constipated. There are 116 women who have borne children and 104 who are nulliparous. not including those obviously below the child-bearing age. Of the parous women, 77, or 66.4 per cent, are constipated, while 54, or 47 per cent of the nulliparous, suffer from this complaint.

The percentages of those constipated at the various ages are as follows:

	Males	*Females*
Under ten years	42%	45%
Ten to twenty years	25%	34%
Twenty to thirty years	51%	48%
Thirty to forty years	34%	63%
Forty to fifty years	43%	66%
Fifty to sixty years	52%	80%
Sixty to seventy years	42%	55%
Seventy to eighty years	100%	100%
Eighty to ninety years	0%	0%

In order to determine the degree of constipation, I have attempted to classify the constipation as severe, moderate, mild and irregular. basing the degree upon the patient's statement. incorporated in the history, as to the frequency or variety of laxatives or methods used to combat the condition. This classification may be more or less arbitrary but the careful nature of the histories makes the figures fairly accurate:

	Males	*Females*
Severely constipated	38%	52%
Moderately constipated	22%	18%
Mildly constipated	10%	9%
Irregularly constipated	15%	7%
Constipated, but the degree not stated	16%	15%

These last groups might fall in any of the four classifications.

To attempt to follow and determine the relationship between the condition which brought the individual to a physician, and that individual's constipation, would make this paper too long and probably more tedious than it is, but, I think it is safe to say that except for a small percentage of those with some abdominal derangement, the condition which brought them to a physician had little or no etiological bearing on the constipation. The converse of this, however, forms an interesting speculation for I do not doubt that many of these complaints might be traceable, directly or indirectly, to their constipation. Regardless of these considerations, the facts are: of approximately 500 individuals, most of whom are ambulatory patients, about 50 per cent admit some degree of intestinal sluggishness. The condition is more marked in women than in men; worse in women who have borne children than in those who have not. The percentage of those constipated in the first decade of life is high according to this analysis but this may not hold good for a larger series of pediatric cases. The other groups are large enough, I think, to furnish accurate information. The percentage for the different decades of male adults follows a variable curve and I am not prepared to say what, if any, particular significance is attached to this. In females, however, we do note a gradual rise in the figures from the second to the seventh decades. This, I judge, is largely due to irregular habits inaugurated during pregnancy and allowed to continue without correction. Also, I think that women, for one reason or another, are less inclined than men to be regular in the habit of intestinal elimination. They are more apt to allow household and social duties to interfere than are men and they pay the penalty for this neglect in their declining years with a dilated, ptosed colon, persistent hemorrhoids. and an intestinal tract that must be lashed into action by some more or less drastic purgative.

As for treatment of this protean condition I have little to say; each case must be judged on its own merits and treated accordingly. Excellent plans of treatment are given in the literature of today. But I do want to close this essay with a plea for prophylaxis. Nowhere does the time-worn maxim that "an ounce of prevention is worth a pound of cure" more aptly apply than here. The devotion of a few minutes daily to the establishment of a regular habit during the healthy years of

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adolescence may mean the saving of many hours of discomfort and inconvenience in later years. Once the habit of chronic constipation is firmly established, so many vicious circles both pathologic and psychologic are set up that it is well-nigh impossible to restore proper physiological function and persuade the patient that it is not necessary to resort to the continuous use of drugs that he has come to regard as indispensable.

Mothers should be taught that, because an infant or child occasionally goes twenty-four hours without a defecation, there is no reason why it should be purged with some drastic cathartic and this repeated at more or less frequent intervals. If during, or following, an acute illness an individual develops a tendency to intestinal sluggishness, do not advise the continued use of any laxative until regularity, proper diet, and hygienic living have been tried. Give the physiology of the organs a chance to readjust itself and do not attempt to anticipate Nature, until she proves herself definitely helpless.

Everyone should be taught the fundamental importance of regularity in hygienic habits and particularly this should be emphasized to all young women before, during, and after pregnancy.

It is the opinion of some authors that constipation is not as prevalent now as it was some years ago but the figures just reviewed show that it is still far too prevalent. It is the opinion of the writer that, if intelligent supervision is exercised over an individual from birth until he is old enough to realize the importance of health himself, the number of those suffering from constipation can be very considerably decreased.

This paper does not attempt to cover the whole subject and much that is important has been left unsaid. However, let us remember that, while it is proper that the brilliant research into the causes and treatment of rare diseases should go forward, with all power to it, a little reflection and care directed to the more common and homely afflictions may not be without benefit to the human race.

131 *Twenty-eighth Street.*

ARGYRIA WITH REPORT OF TWO CASES DUE TO ARGYROL.

By T. DEWEY DAVIS, M. D., Richmond, Va.

Argyria in the generalized form is a condition resulting from the prolonged intake of silver, characterized by a typical slaty-blue discoloration of the tissues which is readily apparent in the skin. At the present time silver poisoning is a comparatively rare condition, but during the first half of the nineteenth century instances of argyria were not uncommon. This resulted from the extensive use of silver nitrate in the treatment of epilepsy and tabes dorsalis (Allen)[1]. During the last two decades the widespread use of organic silver salts is again increasing the incidence of argyria. This fact is illustrated by the two cases reported below.

Myers[2] in a recent article was able to collect forty-four cases. The first was reported by Sala in 1647. All of the early cases resulted from the use of inorganic silver salts. Since the introduction of the organic salts, references to argyria localis are comparatively numerous in the ophthalmological indices. This is to be expected since it is such a simple and painless procedure to instill a few drops of argyrol into an infected conjunctival sac or as treatment for a corneal ulcer. This is frequently done by the laity without the advice of a physician, or the physician may suggest the use of the drug without warning the patient of the dangers attached to its continued application. Frequently it is used as a nasal or throat spray when a portion of it is swallowed and absorbed into the blood stream.

A careful search of the available literature brings to light only three instances of generalized argyria resulting from the use of organic silver salts. Crispin,[3] in 1914, reported a case following the frequent ingestion of collargol for a gastro-intestinal disturbance. Tobler[4] reported a case in 1922, due to intensive collargol treatment by mouth and intravenously for biliary disease over a period of one month. Goldstein,[5] in 1921, described a case following the local use of argyrol in the throat twice daily for one year. Myers[2] states that Lochte's[6] case published in 1920, following twelve injections of silver arsphenamine, is not authentic as the author did not see the patient.

The exact method by which silver is absorbed, to be later deposited in the tissues, is not well understood. Myers thinks that the silver salt when taken into the stomach is converted into silver chloride which unites in the intestine with albumoses, proteoses or amino compounds to form colloids, which are

absorbed and carried to the tissues. These colloidal silver compounds are broken up when they reach a field where their charge is neutralized by electronic affinities of sufficient magnitude carried by the body colloids. The metal then combines with body chlorides forming silver chloride. This in turn is reduced by light, forming either the black oxide or metallic silver. On microscopic examination the deposit is seen to be confined almost entirely to the elastic fibres.

Case Reports

Case 1. Mr. A. (13383). Age 63. Seen October 9, 1922. He complained of "catarrh." General examination revealed marked arteriosclerosis with evidence of myocardial failure. His "catarrh" was in reality a chronic bronchitis. The skin showed a dusky, slaty-blue color. In view of his obvious heart condition it was difficult to determine whether this represented an argyria or a marked cyanosis. He was put to bed and given full doses of digitalis. His dyspnea and other evidence of myocardial weakness cleared up, but the skin pigmentation remained unchanged. Further questioning disclosed the fact that he had been spraying a 25 per cent solution of argyrol into the nose and throat for several months. This evidently was the source of his chronic silver poisoning as he had never used silver in any other form.

Case 2. Mrs. B. (14002). Age 49. Seen January 1, 1923. This patient complained of stomach trouble. Careful general examination was negative and her gastro-intestinal condition was regarded as functional. A peculiar bluish color of the skin was noted. It was learned on questioning her that she had been using a solution of argyrol on the gums at frequent intervals for several years. The appearance was typical of a general argyria.

These patients had no symptoms that could be attributed to the chronic silver poisoning. The typical appearance of the skin in conjunction with the history established the diagnosis.

Treatment of the condition is very unsatisfactory. To prevent its development should be our first effort. This can be done only by warning people against the indiscriminate use of silver salts. This is particularly applicable to physicians who habitually prescribe the compounds. A few words of warning when writing the prescription will prevent the patient from using the drug indefinitely and thus ward off the distressing result.

The silver once deposited in the tissues is difficult to dislodge. Bichloride of mercury, iodides and hexamethylenamine have been suggested. Crispin discovered the beneficial effects of the latter drug while treating his patient for an acute cold. It seemed to bring about a fading of the discoloration. This observation has never been entirely confirmed, possibly because of the scarcity of cases. At any rate, it deserves a thorough trial in the treatment of a rather permanent disfigurement.

608 *Professional Building.*

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CONQUERING DIPHTHERIA.*

By ROGER H. DuBOSE, M. D., Roanoke, Virginia.

Ten years have elapsed since Park and his co-workers began their investigations and experiments, in this country, concerning the immunizing of children with the toxin-antitoxin injection. Park's first formula was found to be too concentrated and caused a painful reaction. Various mixtures were then tried, and finally a suitable formula was found, less toxic, and just as beneficial.

As far back as 1895, Wernicke noted that guinea pigs, actively immunized by the injection of living bacillus and antitoxin, gave birth to immune young. Antitoxin was also found present in both the mothers and their offspring, for at least six months.

It is interesting to know that children under six months of age inherit from their mothers immunity against diphtheria. This period of immunity usually begins to disappear gradually, between the third and sixth month of life, and from then until about the age of six years the child has no immunity. After six years the individual begins to develop his own immunity. Out of 7,109 cases of diphtheria in the State of Virginia in 1922, there were 472 deaths, 84 per cent of that number occurring among children under nine years of age. Over three-fourths of all deaths in the state were among the white population.

*Read before the Roanoke Academy of Medicine, March 17, and before the Southwestern Virginia Medical Society, in Radford, March 20-21, 1924.

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Since the last session of the American Medical Association, from June 1, 1922, to April 1, 1923, there have been in thirty states covered by health reports, 102,042 cases of diphtheria and, up to January 1, 1923, 5,584 deaths. These figures are taken from a report by Neff.

Park and his associates, at the end of two years, completed the immunizing of 90,000 school children against diphtheria. These children gave a positive Schick reaction before the injection. In the meantime, he gathered 90,000 children of the same age, who had refused the test and the inoculation, for comparison. It was found that among the 90,000 untreated children, four times as many cases of diphtheria developed as among the tested and inoculated children.

Schick's test, as you know, is a reliable means of separating the susceptible individuals from those who have antitoxin immunity. It is not necessary to do Schick's test on the preschool age child, because at least 80 per cent are susceptible. It is much easier to inject a child at once, because of the slight amount of pain produced by the inoculation of toxin-antitoxin. According to Park, three injections are given, 1 c.c. each, of a suitable toxin-antitoxin mixture, at intervals of from five to seven days. This will enable about 85 per cent of the susceptible individuals to develop sufficient antitoxin to give a negative Schick's reaction, from one to six months after the last inoculation.

The use of toxin-antitoxin injections in infants under six months of age is not advisable, because of the inherited immunity. Two hundred infants were injected on the third, eighth, and eleventh day after birth, by Park and his assistants. At the end of one year the Schick's test was done on one hundred, and only 52 per cent gave a negative Schick's reaction.

In children from six to twelve years of age the percentage of susceptibility varies. Schroder, of New York, out of 30,000 children in 73 Brooklyn schools, found 42½ per cent susceptible. Zingher in the Manhattan schools, out of 52,000 children tested, found an average of 30 per cent susceptible, the highest being 67, and the lowest 13.6. It is also interesting to know that children over six years of age, from the well-to-do classes, living in uncongested districts, are more susceptible to diphtheria than those from the poorer classes living in more congested districts. Frequent exposure tends to produce immunity, which probably explains this rather alarming statement.

The children who should be given toxin-antitoxin are those of pre-school age. These are the individuals that Park and Zingher have proven are the most susceptible. In my own private practice, in the past six months, I have given toxin-antitoxin to about one hundred children. These children varied in age from four months to eleven years, only two being over six years of age. In the young there was only a slight reaction. In the older children about 10 per cent showed a moderate reaction. The oldest individual, eleven years of age, reacted more severely than any other case. The arm in this case was red, swollen and painful for twenty-four to forty-eight hours. The reaction which occurred in the majority of cases consisted of a small scaly spot about the size of a fifty cent piece. I did not do a Schick's test on any of the above cases.

It is always advisable to explain quite carefully to the parents that immunity will be slow and gradual. It varies in different individuals, usually occurring between the first and sixth month after the last inoculation. No individual, young or old, can be pronounced immune until we get a negative Schick reaction.

The duration of immunity, according to Park, is for at least six years in 90 per cent of the cases, and probably for the remainder of life. Toxin-antitoxin should not be given within two weeks after antitoxin because the toxin is over-neutralized by the antitoxin.

Diphtheria is a very treacherous disease, more prevalent in children from six months to six years of age, than during any other period of life. Since the discovery of antitoxin, the mortality has dropped from 45 to about 12 per cent. However, vital statistics reveal that diphtheria mortality has not decreased during the past five years. For example, in the State of New York, the mortality was 12.8 in 1917 and 16.8 in 1921. We have in the United States, yearly, from 150,000 to 200,000 cases of diphtheria, with a mortality of about 20,000.

From 80 per cent to 85 per cent of all cases of diphtheria, as well as deaths from the disease, occur in children under six years of age. In my opinion, the man is yet to be born who can look into a child's throat and make a

diagnosis of diphtheria. The reason so many deaths occur is because we wait to get a culture, and oftentimes the patient dies before we can get a report. Our leading pathologists will not express their opinion on a smear from a patient's throat. Those who do practice this method will eventually make a mistake. The best procedure is to give antitoxin, and in the meantime to obtain a culture. Certainly no harm can be done by giving the antitoxin and many lives may be saved.

In my opinion, physicians in general are not taking as much interest as they should in preventing disease. The science of medicine has long since reached the stage where all methods are used to prevent disease rather than treat it. Personally, I would like to see every infant in this city, from six months to twelve years of age, inoculated with toxin-antitoxin before 1925. By doing this we would save the lives of many little ones, and make diphtheria as much a thing of the past as typhoid fever. If every physician would familiarize himself with the subject of toxin-antitoxin, and encourage every mother and father with whom he comes in contact to have their children inoculated, I feel safe in saying that within five years diphtheria would be almost extinct. Our public health officer, about a year ago, appeared before various clubs in the city, explaining and advocating what other cities are doing to prevent diphtheria. No man can succeed without co-operation. He needs the enthusiastic support of every physician in order to carry on this work successfully.

In conclusion I want to emphasize that:

Children under six months of age have an inherited immunity against diphtheria.

All pre-school age children should be given three injections of toxin-antitoxin mixture (0.1 L. plus dose) at intervals of from five to seven days, without a Schick test. Eighty per cent of all deaths occur in pre-school age children.

It has been proven among untreated school children that four times as many cases of diphtheria develop as in the tested and inoculated children.

The inoculation of toxin-antitoxin is practically painless.

Immunity from diphtheria begins from one to six months after the last inoculation, and continues, in 90 per cent of the cases, for six years or more—in other words over the most dangerous period.

Toxin-antitoxin should not be given until at least two weeks after antitoxin has been given.

Frequent exposure aids in building up a natural immunity against the disease.

At the present time about 20,000 children die annually, in the United States, from diphtheria. In order to reduce this mortality rate, it is the duty of all physicians to advocate the administration of toxin-antitoxin to every child.

Anchor Building.

SUBACUTE BRONCHITIS.*

By PAUL DAVIS, M. D., Roanoke, Va.

Sometimes in our study of the unusual and mysterious diseases of mankind we fail to concentrate enough thought on the complaints which are so frequently classed, especially in the minds of the laity, as minor ailments. Of these, the most common, the most difficult to treat, and the one for which the doctor is most frequently consulted is bronchitis. This disease, since the recent epidemics of influenza, has been increasing in frequency and severity, and one type in particular has occasioned me so much difficulty that I desired to bring it before the Roanoke Academy of Medicine for discussion. This type I have classified as subacute bronchitis.

Few text-books classify bronchitis as other than acute and chronic. The acute form is supposed to last from one to five weeks and any case lasting longer than that is called chronic. But the words, "Chronic Bronchitis," usually convey to my mind, and, I believe, to the minds of most other medical men, the picture of a disease lasting over a period of years, with a tendency to exacerbations, and most frequently seen in the aged.

The disease that I wish to discuss fits neither of these classes and, in my opinion, is a definite and clear cut entity. The patient is usually first seen after about three weeks of illness. He states that the trouble began with a bad cold or with what he thought was a mild "Flu." Possibly he was confined to bed or the house for one or two days but did not consider himself ill enough to call a physician. Since then he has had a severe cough which is worse at night and worse after exposure to cold damp air. The cough is usually dry, slightly productive and paroxysmal. He is weak, has an

*Read at the meeting of the Roanoke Academy of Medicine, March 3, 1924.

erratic appetite, feels that he is going down hill generally, and thinks it best to consult a doctor before he gets worse. A history of night sweats and an occasional streak of blood in the sputum may be elicited.

The physical examination on such a patient is usually negative except for numerous sibilant and mucous rales over both lungs. These are often widely disseminated but most frequently confined to the bases. They are most constantly heard posteriorly between the scapulae. The pulse and temperature may be slightly elevated, especially in the early weeks, but are most often normal. There are no characteristic laboratory findings. Sputum, blood and urine examinations are negative in all uncomplicated cases. The X-ray may show some small areas of mottling which are suggestive of an early tuberculosis, but most frequently the roentgenologist reports no pathology.

With so few specific findings it is often impossible to make a positive diagnosis on first examination. Confusion is most likely to be caused by tuberculosis. Two chief factors must be considered before forming a definite conclusion. *First:* The history, which is fairly constant and typical. *Second:* The physical examination of the chest. In subacute bronchitis expansion is normal and equal on both sides. (Lagging at the apices is one of the earliest signs of pulmonary tuberculosis). There is a multiplicity of rales heard anteriorly and posteriorly over both lungs. Early tuberculosis is almost always unilateral and in a high percentage of cases limited to the apex. In subacute bronchitis I have as yet been unable to hear the crepitant rales after expiration and cough which are so characteristic of active tuberculosis. Possibly they are overshadowed by the louder rales but I rather believe they are absent because there is no involvement of the air vesicles in the lungs. Several examinations of chest and sputum with X-ray studies in suspicious cases should be made before attempting a definite diagnosis.

Treatment of subacute bronchitis is even more difficult than the diagnosis. I have found no line of treatment that has been entirely satisfactory in my hands, so I shall only attempt to offer a few general suggestions which I think are well worth while. *First:* Impress the patient with the fact that he does not have consumption, a fear that is usually foremost in his mind. *Second:* Give him to understand that he has more than a little cold and may expect to cough for several months. *Third:* Night air is to be avoided but fresh air and sunlight are beneficial. *Fourth:* Wholesome food, regular meals, and general tonic treatment are indicated. *Fifth:* Sedative cough mixtures may give slight relief but do not expect much from drugs of this nature. *Sixth:* Six weeks in a warm climate, such as Florida, is ideal and should always be advised if the financial condition of the patient will permit.

Before closing I am going to report one case that is entirely typical of the condition which I am trying to describe and clearly illustrates the likelihood of confusion with tuberculosis.

Physically, such a patient would do as well, or probably better, if he were diagnosed as an early tuberculosis and sent to a sanatorium, but I am strongly opposed to such a procedure. Sending a man to a tuberculosis sanatorium is similar to trying him for murder in that it leaves a mark which can never be eradicated. He may be proven negative and sent home with a clear record but all his acquaintances remember that, "He's the fellow who was sent away for tuberculosis." The insurance companies are afraid of him and, if he is able to secure a policy at all, it is with extreme difficulty.

I am not advocating a long delay in sending cases of incipient tuberculosis to a sanatorium but I do believe that if such a condition as I have described is recognized it may save a number of patients the anxiety and mental shock incident to being sent away as a case of tuberculosis.

Case Report

C. R., white, male, age 30, married 8 years.

Occupation—Telegraph operator.

Family History—Negative.

Past History—Usual diseases of childhood. Influenza during epidemic of 1917 and 1918. Typhoid fever in 1920. Has always caught cold easily.

Present Illness—First came for examination August 1, 1923. At that time he stated that he had been suffering with a severe cough and pains in his chest for two or three weeks. He had not been confined to bed but had had weakness, dyspnoea on exertion, and a poor appetite. He was losing weight and becoming very much concerned about his condition. No history of night sweats or blood in sputum. No other complaint.

Physical Examination—Temperature 98.8°; pulse 96; respiration 20. Fairly well nourished individual. Pupils equal and react to light and accommodaton. Throat and accessory sinuses examined by a specialist and pronounced negative. Teeth in good condition. Heart negative. Lungs—expansion normal and equal. No lagging at the apices. No impairment of resonance or change in breath sounds. Numerous scattered coarse and fine mucous rales, much more marked at the bases posteriorly. Abdomen negative. Extremities negative.

Laboratory Examinations—Blood Count: Reds 4,400,000; H. 85; whites 7,600; Polys 72; Lymphs 28; Wassermann negative. Urinalysis negative. Sputum, three examinations negative. X-ray Reports: X-ray examination of chest shows a number of enlarged glands around the hilus and an increase in the hilus shadows of both lungs. The upper lobes of both lungs show definite peribronchial infiltration and beading. A few small areas of mottling and infiltration are noted in the apex of the right lung.

Conclusions—The findings noted above in the upper lobe of the right lung are very suggestive of a mild tuberculous involvement and this patient should be carefully watched clinically for the next few months.

Diagnosis—Subacute bronchitis. Observation for pulmonary tuberculosis.

Treatment—Rest in bed for two weeks. Restriction of pastries, pork meats and cigarettes. Elixir I., Q. & S., t. i. d.

The patient slowly improved until the middle of September (six weeks later), when a spell of cold damp weather seemed to give him a relapse. Two weeks later he was not improving so he consented to go to Florida for six weeks. At the end of four weeks he returned for a short while. He had gained fourteen pounds in weight and said he was feeling better than he had in years. His cough had almost entirely left him. He announced, however, that he had secured a position there and expected to return for the remainder of the winter.

Physical examination of his chest at the time of his return to Roanoke was entirely negative. The X-ray report was as follows: X-ray examination of chest still shows a slight increase in the hilus shadows of both lungs and some peribronchial beading and studding along the first and second interspace branches in the upper lobes of both lungs. However, at this time there is no definite Roentgen ray evidence of a tuberculous involvement in either lung. The Roentgen ray appearance of the chest shows a decided improvement since the last examination September 26, 1923.

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Lewis-Gale Hospital.

TUBERCULOSIS OF THE SKIN.
Report of a Case.*

By JAMES K. GRAY, M. D., Marion, Va.

Tuberculosis of the skin, while relatively infrequently seen except in the larger clinical centers, comes under the care of the general practitioner, in some form, more frequently than one would expect at first thought. Owing to the painless nature of the lesions and their tendency to chronicity, the case does not always come under the care of a physician as soon as it should, which in part accounts for many of the extensive involvements which could have been prevented by early diagnosis and rational treatment.

There are several different forms which tuberculosis of the skin may assume, chief among which are the following: (1) Lupus vulgaris, (2) Scrofuloderma, (3) Ulcerative acute miliary tuberculosis, and (4) Lichen scrofulosorum. In these types the bacilli have been demonstrated as present by microscopic examination, animal inoculation, and reaction to the injection of tuberculin has also been obtained as a further evidence that the bacillus of tuberculosis is the causative agent.

There are still other lesions termed tuberculides whose cause is disputed, being attributed by some to circulating toxins, but in which the causative organism has never been located. The assumption is probably correct that, except in cases due to traumatic infection, the disease is rarely primary but secondary to infection in some other part of the body.

Time and space will not permit of my going too deeply into a description of the different types, however suffice it to say that lupus vulgaris is the most chronic as well as the most resistant to treatment. Scrofuloderma, while of a rather subacute nature, tends to have acute outbreaks with delayed healing and probability of a recurrence after a number of years. Ul-

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cerative acute miliary tuberculosis of the skin is usually due to auto-inoculation from a nearby focus of infection and is of relatively rare occurrence, being seen most often in connection with advanced disease of the internal organs. Lichen scrofulosorum is still more rare and is more often seen in children with tuberculosis of the lymph glands, bones, etc.

Whereas all the above mentioned forms of tuberculosis of the skin are stigmata of more serious involvement elsewhere in the body, yet many cases go no further than this and pass a lifetime in comparatively good health.

In the relief of lupus vulgaris, surgery has played a certain part, more especially in the early stages, by excision and perhaps skin grafting. As a rule, however, the involvement is so extensive by the time the case reaches the physician that this is not practicable.

It is a known fact that the X-rays and the shorter rays of the spectrum, or ultraviolet rays, have a tendency to inhibit the growth of bacteria. Hence, with a known causative agent and a means of combating it, we are at this time better fitted to treat this intractable disease than ever before. Before the discovery of the efficacy of these agents, local applications were used with not very great success. These still have their use but their failure in many cases may be attributed to their inability to penetrate deeply enough into the tissues to reach the organisms. The X-rays have their known penetration in the hands of the skilled roentgenologist and can therefore be brought into efficient use. The quartz lamp furnishes the richest source of ultraviolet rays and is explained as a vacuum tube of fused quartz containing mercury vapor, through which an arc is passed. The quartz bulb is used because it does not prevent the passage of ultraviolet rays as glass does. With such a lamp it is possible to produce a great concentration of ultraviolet rays, hence treatment can be given in a short exposure.

The commonest source of ultraviolet rays is sunlight itself, though not in great concentration. The well known phenomenon of sunburn is good evidence of their potency.

In the treatment of the case which came under my care, sunlight was the only source of rays available, yet proved to be very efficacious in the treatment of the case, as shown by the results.

Report of Case

Mr. C. P., a farmer, who was seen in October, 1921, complained of a skin trouble of two months' duration. Physical examination showed him to be a well nourished man with no organic diseases nor stigmata except that there was scarring of the back of the neck and sides extending upward to the temple on one side. The Wassermann was negative. Examination showed there to be an area of superficial ulceration extending from the cervical and post-cervical regions down over the neck, scapular, and deltoid regions. There were several small sinuses leading into broken down cervical glands and other indications to show that the case was apparently one of scrofuloderma. The general condition of the patient was good and he was not suffering acutely but his mental attitude was very gloomy and depressed. The first treatment instituted was cleansing the area and the application of boric acid ointment. This cleared up the gross infection but there was no tendency toward healing. I then applied a preparation made from the official citrine ointment or ointment of nitrate of mercury by diluting one-half with olive oil. This, however, proved to be too irritating and was further diluted to one-fourth strength. This was still somewhat irritating but was spread on flat dressings and applied to the affected area.

In addition to this local treatment, the neck and shoulder region was exposed to the direct sunlight, at first for two hours a day, later for six hours. In the beginning there was a good deal of suffering due to the irritation produced by this treatment, but within a week healthy granulations began to form. Within ten days the sinuses ceased to drain and by the end of three weeks healing was taking place rapidly over the whole area. A complete recovery was finally made with only superficial scarring. Since that time there has been no recurrence of the trouble and the patient has remained in perfect health.

In the case thus reported, we cannot say with certainty which was the more effective remedial agent, whether the nitrate of mercury ointment or the exposure to sunlight. Certainly, however, we have herein a practical and effective method of treating scrofuloderma and it is also to be hoped that in the hands of those skilled in the use of the X-ray and quartz light, lupus vulgaris may also be cured.

PNEUMONIA: ITS TREATMENT.*

By J. A. NOBLIN, M. D., East Radford, Va.

Pneumonia is a condition, not a theory; and when we face it at the bedside there is no formula, no scientific resource, that will alone meet the indication. So in this paper I will only briefly give the treatment that I have found most satisfactory.

In the first place the general surroundings should be made as comfortable and agreeable as possible. Patient should be in a room to himself, all others excluded except the nurse. Room should be comfortably warm with an abundance of light and fresh air. The chest should be protected with a cotton jacket. Have the patient change his position frequently, so as to avoid hypostatic congestion.

Here, as a rule, we are dealing with a self-limited disease; we may expect a certain life cycle of bacteria to continue in the body for a limited time and then disappear, leaving the patient to recover if he has survived this limit. The problem is to keep the patient alive a certain number of days and recovery will be practically certain.

The great danger, especially in double pneumonia and in the aged, is that of the lungs filling with exudate, blocking off the air cells and diminishing the supply of oxygen to the blood—thus causing carbonic acid gas poisoning. The toxemia frequently affects the myocardium; for this reason the heart must be spared as much as possible. Exertion on the part of the patient must be avoided. Do not make a complete examination of the lungs every day and never have the patient raise up, always examine on sides or back.

At the very beginning, if the toxemia is very marked, I give a large dose of calomel, followed in eight or ten hours with a saline. After this, an enema every second day will usually be sufficient. As a rule, few or no drugs are required in most cases of pneumonia. The need for medication must appear before any drug is given, except perhaps digitalis, which should be given before the heart muscle is in a state of inflammation or degenerated, and I might add quinine to combat the toxemia. Strychnine, caffein, sodiobenzoate, camphor and whiskey may be employed as stimulants in addition to digatalis. All these drugs are used for symptomatic reasons, but none, except perhaps digitalis and quinine, are a routine.

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Abdominal distention is often encountered. This is due to paralysis of the intestinal muscles from the toxemia. This condition is often mistaken for typhoid. Turpentine stupes may be sufficient to relieve slight degrees of distention; more severe cases may require turpentine or glycerine enemata. Pituitrin, 1 c.c. hypodermically, may prove effective.

I have gotten excellent results from serum treatment, especially pneumonia phylacogen. I believe that serum treatment will in a short time be perfected to such an extent that it will practically be considered a specific.

Diet is not so important in the treatment, except that no food must be given which will interfere with elimination. Fluids must be given to increase the elimination by the kidneys, intestines and skin. I always insist on large quantities of water being given, at least four to six quarts in twenty-four hours. If fluids cannot be given by the mouth on account of vomiting or delirium, the Murphy drip method, or subcutaneous injections of saline solution may be resorted to.

Pain, delirium or restlessness can be controlled by morphine and I do not hesitate to give ¼ grain or more, always with atropine, as quiet and sleep are absolutely essential. Warm alcoholic sponging is always a routine for cleanliness. To relieve the cough I usually give codein or heroin.

I have seen cases taking practically every drug I have mentioned in therapeutic doses at the same time. I believe that careful and inspiring nursing, with medication as indicated, will lessen the death rate, and that the greatest danger is in over-treatment.

HYPEREMESIS GRAVIDARUM.*

By GEORGE A. WRIGHT, M. D., Abingdon, Va.

The so-called "physiological nausea" takes place in more than fifty per cent of pregnant women. This condition must not be confused with the "pathological" type of vomiting, in which there is constancy of nausea and frequency of vomiting, exhaustion, loss of weight and of sleep, salivation, hematemesis, fever and rapid pulse, and apparently all ingested food is returned, the patient becoming dehydrated, jaundiced, etc. These things, if not corrected, in due time lead to acidosis, coma and death.

It strikes the writer that the above classification of the types of vomiting of pregnancy

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is more practical than those generally advocated by authors. Under the physiological division, we would include such terms as reflex and neurotic, which conditions usually respond to a correction of a misplaced uterus, or treatment of an eroded cervix, with rest in bed in connection with a general line of treatment for the psychological effect; while the pathological classification would embrace only those cases in which there is a toxemia, with a definite pathology. That a purely physiological process should so frequently develop serious pathological phases, is an unsolved problem of scientific medicine. The fetus thrives as a parasite on the mother, who acts as host.

The theories advanced as to the cause of pernicious vomiting of pregnancy are about as numerous as the papers that have been written on the subject. The prevailing impression is that it is of toxic origin; that this substance, regardless of what it is, for it has as yet not been isolated, originates in the blood of the fetus or mother, though possibly in the placenta itself. "Recent studies suggest that the underlying factors of hyperemesis and its complications are to be sought in some toxemia depending on some disturbed liver function, and that the liver when underfed and its glycogen content becomes low, as seen in vomiting, the organ becomes a poor detoxifier and a vicious circle ensues."

Williams believes in endocrine unbalance, in that during the first three months of gestation, when there is no absorption into the mother's blood of corpus luteum, vomiting is more pronounced; and the fact that the administration of adrenalin has in many instances acted as a specific would tend further to corroborate Williams' belief.

It is common knowledge that in about eighty per cent of women there develops a perceptible thyroid enlargement during pregnancy. The para-thyroids become hypertrophied; and experiments have shown that healthy dogs, in which there had been previously done a partial para-thyroidectomy, would remain in health until they became pregnant, when they would develop tetany. We can through X-ray examination demonstrate pituitary gland hypertrophy, which fact is further confirmed at autopsy. The clinical evidence is manifested in the "coarseness of the features," as seen in pregnancy.

Someone has advanced the theory that hyperemesis ceases after the fetal liver has developed and begins its function; and, in as much as the chief pathology of this anomaly is located within the liver, this supposition is not without reason. Heretofore, nothing of a practical nature has resulted from the various tests whereby liver function could be accurately gauged. Let us hope that the Rosenthal phenoltetrachlorphthalein test, as reported in the *American Journal of Obstetrics and Gynecology* of January, 1924, will give additional information in this connection. At any rate, the results as reported in several cases suggest that "this test is a more accurate index of existent toxicity than variable clinical symptoms are, and that it may be possible by means of this test to anticipate the clinical picture."

Among other probable causes of this not uncommon condition are focal infections; and in all instances the importance of complete case histories with thorough physical examinations cannot be overestimated, thereby revealing some obscure existing condition, such as: abscessed teeth, diseased tonsils, sinus infection, chronic appendicitis, gastric or duodenal ulcer, gall-bladder disease, acute intestinal obstruction, cerebral tumor, etc., at the same time bearing in mind the possibility of a retroverted uterus.

The vast majority of cases of pernicious vomiting occur during the second and third months of gestation, rarely extending into the fourth month, and are seen in multipara as well as in primipara, and, according to Kerr in one out of 700 cases.

The toxic type of vomiting may be distinguished from the milder form in the greater gravity of its symptoms, and, second, through blood chemistry, although DeLee has worked along this line without forming a definite conclusion as to the merits of blood analysis as a basis on which to determine the necessity for emptying the uterus in toxic cases. "In the true toxemic cases there are evidences of disturbed metabolism in the blood and urine, upon which a differential diagnosis may be based." Williams was the first to show that the urine from such patients contains a high ammonia co-efficient, with an increased amount of total nitrogen excreted as ammonia, normally about five per cent; while in toxic vomiting it may reach twenty to fifty per cent. The urine is much darker than normal, of higher specific gravity, acetone and diacetic acid four plus probably, and albumin present, as a rule.

It is not until later in the course of the disease that tests are positive for bile, which when found is a serious omen. Blood changes show non-protein nitrogen greatly increased above normal, with urea nitrogen normal or decreased.

The one important pathological lesion in this condition is a central necrosis involving the lobules of the liver. Surrounding this necrosed area there is marked fatty degeneration of tissue. According to Losee, pathologist to the Lying-in Hospital of the City of New York, in all such cases coming to autopsy the above pathology has been found, the liver being much smaller than normal. In other words, all fatal cases of hyperemesis result in acute yellow atrophy of this organ, as contrasted macroscopically with the eclamptic liver, which is invariably conspicuously enlarged. The kidneys may show no change; however, as a rule, there is more or less necrosis involving the convoluted tubules.

The symptoms as enumerated in the beginning paragraph of this article give one a pretty definite picture of a case of toxic vomiting. However, in addition, it is proper that mention of certain nervous manifestations be made; that is, in well developed or advanced cases, the patient not only does not sleep but frequently displays delirium, which in connection with hematemesis (coffee ground), a continued acidosis after carbohydrate-soda treatment, the presence of jaundice with bile in the urine, increased pulse rate with arterial hypotension, would most assuredly solve the problem that has confronted the physician throughout the course of the illness: namely, when is one justifiable in instituting therapeutic abortion? The latter symptoms would indicate that the condition has progressed to a state where the life of the patient is in jeopardy and further delay may prove fatal. In this connection, I do not wish to place myself in the attitude of an abortion advocate; I am far from it. In this article I shall not include case reports other than to state that, of sixteen such cases under treatment, it was deemed necessary in one instance only to resort to this method of relief.

The essential point in the treatment of hyperemesis consists in combating acidosis. There are two factors absolutely necessary to a successful treatment: first, isolation of the patient; and second, a competent nurse in attendance. Outlining in a general way the manner of handling these patients, I will state that upon entering the hospital all food is withdrawn for a period of at least twenty-four hours; they are given a thorough gastric lavage, using one dram of sodium bicarbonate to the quart of moderately hot water. After an interval of rest, depending on the patient's physical condition, the colon is thoroughly emptied by high S.S. enema. If there are nervous symptoms, the patient is given a retention enema containing bromides and chloral, and in selected cases morphia, grain ¼, hypodermically; this followed by proctoclysis (Murphy drip), glucose-soda five per cent which is continued for an indefinite period, in so long as the marked acidosis and nausea persist; repeating the morphia according to indications to control rectal tenesmus and restlessness. The promotion of sleep with the correction of acidosis through the administration of glucose-soda by proctoclysis usually results in a marked improvement of the patient. However, there are exceptional cases in which it is expedient to resort to intravenous therapy, giving ordinarily from 300 to 500 c.c. dextrose-soda two and one-half per cent solution. Very favorable results have been noted; although we have observed in some instances a marked reaction following this treatment: therefore, intravenous treatment would not be advocated except under hospital advantages.

The one preparation probably more generally used, and which I give with few exceptions as a routine, is corpus luteum in 1 c.c. doses daily: although in instances where the drug was not given, the results of treatment were no different. Therefore, it would seem that as the condition of acidosis becomes lessened, there is a corresponding improvement of the patient. After a twenty-four hours' fast, following gastric lavage, an ice bag is put on epigastrium and the patient given ice cream.

Magnesium citrate, 4 to 6 ounces, serves a useful purpose in removing mucus from the stomach, and some of these cases retain this preparation remarkably well, it allays nausea in some instances. Ordinarily, the above line of treatment will bring desired reslts, although nausea and vomiting persist in exceptional cases and it becomes necessary to resort to duodenal feedings, as originated by Paddock. This, however, is no simple procedure under ordinary conditions for, in the presence of continuous nausea and frequent vomiting, the object is accomplished under decided difficulties, and in some instances it is of consolation to

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have fluoroscopic facilities to ascertain if the tube is in the duodenum. The usual line of procedure is as follows: From 30 to 45 minutes prior to introducing tube, morphia gr. one-fourth, is given hypodermically; the nasopharynx is mopped or sprayed with cocaine solution, and the tube introduced through nose rather than mouth, there being less nausea and gagging which facilitates matters to a marked degree and admits retention of tube with less displeasure on the part of the patient for a protracted time, thereby permitting repeated feedings.

Fischer's solution has its advocates, and in several instances has been used by the writer with most gratifying results, though without apparent effect in others.

The favorable results reported on the use of phenolbarbital (luminal sodium), which drug allays nausea and vomiting for a time, permitting the retention and assimilation of food, is of interest; and its method of administration is therefore recorded. This drug is administered in its purest form hypodermically, in one to two grain doses every four hours, ordinarily; though it may be repeated in three-hour intervals in such doses without untoward effect, according to R. Luikard, and has proven successful after failure of corpus luteum, intravenous dextrose and duodenal feeding.

In closing, I wish to quote DeLee, who says that "glucose has become standard treatment of hyperemesis gravidarum, but it will sometimes fail in pure toxicosis, as well as in neurotic forms of vomiting. We believe that the sugar metabolism is at fault, at least as a contributory cause, or as an effect of the disease; and we aim to supply the deficiency. Probably after we know more about the physiological action of insulin, we may be able to apply it to the treatment of hyperemesis."

The George Ben Johnston Memorial Hospital.

DIABETIC COMA, REPORT OF AN INTERESTING CASE.*

By J. J. GIESEN, M. D., Radford, Va.

R. F. J., white, male, age 20, single. Occupation taxi-driver (formerly employee at N. & W. Shops). This patient came under my observation in the early part of December, 1923, consulting me for an acute Neisserian infection. At this time he gave me a history of lues contracted two years ago, for which he had received early intensive treatment and after six months, was pronounced "cured;" also that he had had diabetes for about eighteen months. The diabetes was checked up by urinalysis, which was positive for glucose in large amounts. At this time, his blood Wassermann was negative. The diabetic history, as given, was that about eighteen months ago, while receiving anti-luetic treatment, he gradually developed an excessive thirst, excessive urination with a frequent nocturia. A local physician whom he consulted for these symptoms diagnosed his condition as diabetes and referred him to the University Hospital, Charlottesville, Va. This was prior to the time that insulin became available to the profession. At the University Hospital he was given the usual workout with a starvation diet and rendered sugar-free, then gradually worked up to a fairly liberal diet and sent home with instructions to follow this diet carefully and to report to his family physician once weekly for urinalysis. However, he failed to follow these instructions, began to use "patent medicines," was utterly indiscreet in his dietary and did not place himself under medical care. I warned him when I obtained this history that he was taking grave risks with himself and he agreed to resume the prescribed diet, which, however, if he did so, failed to affect his glycosuria or symptoms. He was then informed about insulin and it was suggested to him that he enter some institution properly equipped for working out insulin therapy, which he promised to do just as soon as his urethritis was relieved.

On December 24, 1923 (Christmas Eve), he reported to me for his usual daily attention and complained at that time of "feeling out of sorts;" he had a soreness in his right knee with some swelling, felt feverish, had a headache and was dizzy. I promptly suspected acidosis and checked his urine which was entirely negative for acetone and diacetic acid but contained the usual amount of sugar. My conclusion, therefore, was that his line of symptoms was due to a reaction resulting from an invasion of the knee joint by the gonococcus. I instructed him to go home, go to bed, and to use local applications to the joint to be followed in a few days by vaccine therapy.

About noon on the following day (Christmas Day), he was brought to Saint Albans Sanatorium in a profound coma which, according to the family, had developed about midnight,

*Read at the meeting of the Southwestern Virginia Medical Society in Radford, March 20-21, 1924.

having been preceded by restlessness, chills, violent headache and mild delirium on the evening before. At this time, the patient was moribund, respirations were stertorous, the pulse was thready and so fast that it could not be counted, face was flushed, body was rigid, his breath had the characteristic fruity odor, his reflexes were abolished, and death seemed imminent. He was immediately catheterized and the urine obtained was loaded with acetone bodies and sugar; it also contained at this time a liberal trace of albumin but no casts. A diagnosis of diabetic coma, which was obvious, was made. No insulin being available here at that time and having had no experience in its use, Dr. J. G. Davis, Christiansburg, Va., was called in consultation and requested to bring with him a supply of insulin. Awaiting his arrival, for want of something better to do, 500 cubic centimeters of physiologic salt solution was administered by hypodermoclysis, 2 grams of sodium bicarbonate administered intravenously, and his bowels were moved vigorously with a glycerine-magnesium sulphate enema given high with the rectal tube. When seen by Dr. Davis two hours later, his condition was practically the same, the heart action only being probably a little better. He was immediately given 15 grams of glucose intravenously, 20 units of insulin intravenously, and 40 units of insulin hypodermically. Caffein sodio-benzoate was also given hypodermically for stimulation. The glucose, insulin and caffein-sodiobenzoate were repeated every two hours, and at 11:45 P. M., eight hours after insulin was first administered, and after having received a total of 240 units of the drug, he was vastly improved and could be aroused from his coma; he was, however, completely disorientated and his bowels and bladder were incontinent. His condition on the following day was slightly better; repeated urinalyses showed persistent acidosis, sugar and albumin. Insulin was continued, 20 units hypodermically every two hours, with an occasional 10 unit dose intravenously, each dose being preceded by sweetened orange juice orally. Fluids were forced at all times, by mouth, by hypodermoclysis and by rectum. Under this plan, the patient rapidly improved and three days later was entirely conscious, began to complain of hunger, urine showed a marked reduction in sugar but with large amounts of acetone and diacetic acid persisting, in spite of the general improvement. The administration of insulin was gradually decreased and a liquid diet poor in carbohydrates but with a liberal amount of butter-fat started, insulin being administered fifteen minutes before each feeding. The diet was gradually increased and the insulin reduced until his urine became sugar-free for the first time on January 3, 1924, ten days after the onset of the coma. However, the urine continued to show moderate traces of the acetone bodies for several days after it became sugar-free. During this time, the right knee, which had undoubtedly been invaded by the gonococcus began to swell and became very painful, patient's temperature being elevated to between 99° and 102°. Stock gonococcus vaccine was given hypodermically in gradually increasing doses and the knee improved rapidly so that the patient was able to sit up out of bed on January 7th and began to walk on the 9th. He was discharged from the Sanatorium on January 10th, his urine being sugar and acetone free, was placed on a fairly liberal diet with instructions to administer 20 units of insulin fifteen minutes before each of three prescribed feedings. He and his family promised that he would promptly be placed in some institution properly equipped for working-out diabetic and insulin therapy, but so far he has failed to do this and has continued on the diet and insulin dosage outlined for him by me. He is now working, feels fine, has no urinary disturbance, has gained considerable weight and strength and looks the picture of health. His knee joint trouble has disappeared and his urethritis is apparently cured. He brings me an occasional specimen of urine which rarely shows a small trace of sugar but has not contained any acetone bodies.

No blood sugar determination was made on this patient because no apparatus for same was available. In spite of the lack of this pertinent information, huge doses of insulin were administered (some of them intravenously) because of the desperate condition of the patient, which demanded heroic measures. Untoward action of the drug, however, was forestalled by preceding the larger doses with glucose intravenously and, when the doses were reduced, by sugar and orange juice orally.

It is questionable whether there is any significance attached to the development of his diabetes coincident with a syphilitic infection, and whether the onset of the acute infection (the gonococcal arthritis) in any way precipitated the severe acidosis. These points are

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mentioned simply because they are in his case history, which is being reported verbatim.

As I see it, the three striking features of this case are:

(1) The development of marked coma within twelve hours after his urine was free from acetone bodies.

(2) The presence of symptoms of impending coma with a urine negative for acetone bodies.

(3) The prompt response to insulin therapy in a case which had all of the ear-marks of a fatal outcome.

St. Albans Sanatorium.

THE SIGNIFICANCE OF INFECTION.*

By D. L. HARRELL, M. D., Suffolk, Va.

Recently no phase or field of medicine has been more productive of sane, sound etiological deductions than that of infection. With all the advancement, the radical changes in our opinions as to the cause of symptoms, and the marked benefit to mankind this revolution has brought about, and with continued developments, it causes us to believe that we have only seen the subject from the surface. Further study suggests that the two chief causes for disease and death are "infection and trauma." This classification of the causes of disease and death will give at least eighty per cent of our cases to infection and forms a good working basis for study. One of the greatest drawbacks to the advancement of the medical science has been giving of too many names to practically the same pathological entity. In trying to classify according to name one often gets lost in the confusion. It is easy to enumerate a great list of maladies already of accepted infectious origin, and difficult to name many that are not.

We are at present, observing the havoc wrought by chronic infection, and many times are able to trace back to primary foci, often in other organs or parts of the body, the true etiology to a chronic infection of years' duration, even to childhood. It may be a hopeless case of chronic nephritis may be traced to abscessed teeth, or a mitral regurgitation with failing compensation and death to infected tonsils. Such and other striking observations should be sufficient to inspire further study and closer observation, for all chronic infections have at some time been acute.

*Read before the Southside Virginia Medical Association at Lawrenceville, June 12, 1923.

The cure of every acute infectious process almost invariably means also the prevention of a chronic, and often incurable process. If extracting an abscessed tooth not only cures the toothache but prevents pyelonephritis, and the cure of an endo-cervicitis not only relieves the patient of leucorrhea but prevents rheumatism or some other dreadful malady, why not be more alert in the future and apply what little we believe and know about infection more practically for the good of mankind?

High blood pressure and its concomitant vascular changes, organic heart lesions, nephritic pathology, some of the respiratory diseases, pathological changes in the liver and gall-bladder, intestinal tract, spleen, pancreas, the blood diseases, and many other conditions manifesting chronic pathology, are probably preventable conditions, except in the aged, and their terminal infection passes patients to the great beyond.

Preventive medicine is not finished by controlling the communicable diseases. The restoration of a chronic dyspeptic to apparently normal health and well-being by the removal of the appendix or gall-bladder commands the gratitude of the patient, and justly so, because of its real service and it is in keeping with progress, but we cannot stop at this, as in all probability these are secondary conditions that are preventable. They demand further investigation until the primary focus has been located and removed. Our mission as physicians is to recognize in the acute infections an enemy whose purpose is to destroy health and life, and to feel our high moral obligation to patients so keenly that we will lose no time nor effort in annihilating it.

The two portals of entry for infection in the body are the outside and the inside—the skin and the mucous membrane.

First, The skin is of minor importance other than through trauma.

Second, The mucous surfaces may be divided into the respiratory system, the gastro-intestinal tract and the genito-urinary tract. Of the mucous surfaces we may mention in order the locations frequently manifesting infection as the tonsils, teeth, sinuses of the upper respiratory tract, stomach and small intestines, appendix, biliary tract, cervix, Fallopian tubes, urethra, prostrate and seminal vesicles in the male. It makes little difference how definite or indefinite a case history may be, it becomes our duty during the physical examination to pay

strict attention to each avenue of entrance for focal infection as a routine. In questionable conditions every known means of drawing correct conclusions should be exhausted. The development of the medical science has long ago passed beyond the possibilities of one man. It is not possible for any one practitioner to possess all the valuable qualifications, instruments and facilities for determining the existence, or location of infection. Many times it is necessary to call for assistance—it may be from the X-ray man, the eye, ear, nose and throat specialist, the urologist, or some other skilled in a specialty, who is able to ascertain the necessary facts before a true diagnosis can be made. The old plan of waiting for developments gives birth to our mortality, and must be superseded by early action and co-operation. So long as the patient is under our observation we are responsible for his safe keeping. Often a small tonsil that looks perfectly innocent furnishes enough poison to make and keep the patient an invalid. The same is true of focal infection wherever found in the body.

From time to time we are startled to see what wonderful progress is being made by the study of medicine from the standpoint of infection. One well founded idea giving birth to a new idea, and it to another, every stride brings us nearer the real goal of etiology. Many fields and phases that will finally yield even more abundant truth are yet undeveloped. The time is not far distant when we will be better acquainted with the endocrine system, and with the process of metabolism on account of a better knowledge of infection.

The surgeon has realized that his mortality is not entirely governed by the rigid aseptic technique at operation, being certain that no infection is introduced from without. More and more stress will be placed on the removal of focal infection, especially of the tonsils, teeth, and sinuses, because these pathological conditions at times possess a type of infection which when let loose in the general system after operation may bring about a fatal issue, when at examination the patient was apparently considered a good or fair surgical risk. It is hoped this idea will ultimately be of benefit in the class that all surgeons see with fear and trembling namely, obese women around the menopause.

In obstetrical practice, too much importance can not be placed on the removal of focal infection. It is best to have this done before the period of pregnancy begins, but in many cases this is impossible and the physician must decide as to the advisability of a tonsillectomy, tooth extraction, etc., during the pregnant state. These patients usually stand such surgical treatment without interrupting the pregnancy and it is often advisable.

I have briefly mentioned a few conditions met with in every day work, all of which have been previously discussed in the meetings of this society but they are intended to further emphasize the significance of infection.

In conclusion I wish again to call your attention to the fact that:

1. Probably eighty per cent of the disease and death throughout the land is caused by enfection, while the remaining twenty per cent will cover traumatic cases and a few others, such as chemical poisons, longstanding fear, starvation, extremes of temperature, etc.

2. Many of the chronic incurable diseases of middle and later life are preventable by the early removal of primary infection whenever possible.

3. The mortality in obstetrical and surgical practice can be decreased by a closer study and the removal of focal infection.

Lakeview Hospital.

A CASE OF PNEUMOTHORAX OCCURRING IN BRONCHIAL ASTHMA.*

By HUNTER H. McGUIRE, M. D., Richmond, Va.
McGuire Clinic.

F. E. F., a young man, age 27, married, was first seen during the latter part of September, 1923. He complained of attacks of asthma and weakness. His family history was entirely negative and there was no suggestion of any contact with tuberculosis. His past history was also practically negative, except for the asthma which had occurred in attacks ever since he could remember. He often went as long as a year or more without discomfort, and noticed that the asthma was more or less associated with "head colds," which as a rule preceded the attacks. They were more frequent in Winter than in Summer, and were more apt to occur in the South than in the North. He had never noticed relation between the attacks and any article of diet, and stated that they occurred in the city as well as in the country. Aside from this and having pneumonia in infancy, a tonsillectomy in 1913, and being of a nervous high-strung temperament, there was nothing of any significance in his

*Read before Richmond Academy of Medicine, March 11, 1924.

past. He really dated his present illness as commencing six weeks previously, at which time he had a severe spell of asthma with more or less constant discomfort ever since.

General physical examination was negative, aside from undernutrition and slight pyorrhoea. His chest showed nothing abnormal except for slight hyperresonance on both sides and sibilant rales scattered throughout both lungs. Examination of his blood, urine and blood Wassermann were reported negative. There was no eosinophilia.

In view of his history of the attacks of asthma being frequently preceded by "head colds," it was thought that his trouble was probably due to a sensitization to bacterial protein. It was suggested that he have the condition of his nose, throat and sinuses investigated and, should nothing be found requiring correction, that an autogenous vaccine, made from the post nasal secretion, be administered.

On December 6, 1923, ten weeks later, he was again referred to us for examination and treatment. During the time which had elapsed he had received repeated injections of vaccine made from his sputum. At first he apparently obtained some relief, but during the last month his symptoms became more marked. His discomfort was constant and consisted of difficult breathing, wheezing, and a sense of constriction in his chest. He also complained of palpitation, gaseous eructations, frequency of urination with nycturia, and weakness. He was unable to sleep and gave a history of loss of weight. During this time there was nothing in his history suggesting that anything unusual had taken place. He only stated that for the past four weeks his discomfort had been worse, and he felt that it was gradually becoming more pronounced.

Physical examination showed considerable undernutrition. His eyes were a little prominent. There was slight pyorrhoea. His thyroid showed slight fullness, and there was decided tremor of the fingers. On percussion his heart showed definite displacement to the right. Heart action was regular but rapid, rate 116 to the minute. Auscultation was negative, and his blood pressure was 108/65. The thorax was symmetrical and there was practically no difference in expansion on the two sides. The percussion note over the entire left chest was markedly hyperresonant and the breath sounds were scarcely audible. Trousseau's coin test was negative. Examination of the right lung showed no abnormality aside from scattered moist and sibilant rales.

X-ray examination of his lungs was reported upon as follows:

"Patient has a hydropneumothorax on the left side. The lung is uniformly compressed fifty per cent to sixty per cent. There is some displacement of the heart to the right. Approximately three ounces of fluid is seen. While there are a few discreet, well calcified tubercles present in the right lung, signs do not warrant a diagnosis of clinical unhealed tuberculosis. No gross lesion is found in the left lung. It would be difficult, however, to determine the presence of a small amount of tuberculous infection in the partially collapsed lung."

Examination of his blood was normal. Gastric analysis was negative except for moderate hyperacidity. His urine showed a specific gravity of 1,030 with abundant albumen, a few blood cells, an occasional pus cell, and occasional hyaline and granular casts. The pthalein output was sixty per cent in two hours' time. His blood sugar, non-protein and urea nitrogen were within normal limits. His blood Wassermann was negative.

Examination of his nose, throat and sinuses showed that the portions of both tonsils remaining were cryptic and contained considerable secretion. He also had a catarrhal ethmoiditis.

In view of these findings the following diagnosis was made:

"Hydropneumothorax (spontaneous); Bronchial Asthma; Chronically Infected Tonsils; Toxic Nephritis; Catarrhal Ethmoiditis; Gastric Hyperacidity; and Undernutrition." The question of increased thyroid activity was considered, but it was not thought advisable to do a determination of his basal metabolic rate.

The patient was advised to enter a hospital for a period of observation and treatment. He was kept in bed and given a diet directed toward the hyperacidity and the condition of his kidneys. Belladonna and potassium iodide were given orally three times a day, and adrenalin administered hypodermically when necessary.

On December 9th, 600 c.c. of air was withdrawn from the left chest. This was done by reversing the pressure in the bottles used in the apparatus employed in producing artificial pneumothorax. On December 13th, 750 c.c. of

air was withdrawn. The following day fluoroscopic examination of his lungs showed appearances identical with those found on the previous examination above reported.

During this time, notwithstanding this finding, he showed improvement in his symptoms. There was less difficulty in breathing, and he stated that he was more comfortable than he had been for several weeks. He ran no elevation of temperature, and his pulse ranged from 88 to 114, the amount of tachycardia depending upon the extent of his respiratory discomfort at the time his pulse was taken.

Daily examinations of his sputum were negative for tubercle bacilli, and his urine cleared up to a large extent. Urinalysis on December 16th showed only a trace of albumen and microscopically it was negative.

His sensitiveness to foreign proteins, including the common bacteria and foods, was tested and he gave no reaction to any of them.

It was advised that he have his tonsils removed, both on account of the nephritis, and because of the possibility of their being a factor in the production of his asthma. He was unwilling to have this done, and was finally discharged from the hospital on December 17, 1923, with instructions to report at certain intervals for observation, and for treatment of his throat and ethmoids.

On December 21st, 750 c.c. of air was again withdrawn from the left pleural cavity.

He was next seen December 28th. He had had no attacks of asthma but continued to complain of a sense of oppression in his chest and of wheezing and difficult respiration. Examination showed that he had gained in weight, and his general appearance showed decided improvement. His heart did not appear displaced to as great an extent, and the breath sounds over the left side were not so distant. There was still decided hyperresonance.

On January 28th fluoroscopic examination of his lungs showed that the pneumothorax had greatly diminished, and that the small amount of fluid previously reported had disappeared.

He was next examined on February 21st. During the time that had elapsed since he left the hospital, he had had three severe attacks of asthma. Between these attacks he remained fairly comfortable and was able to attend to his work. He felt much stronger and showed a gain of eighteen pounds in weight. Examination of his lungs was entirely negative, aside from moist and sibilant rales. His heart was apparently normal in size and position. Urinalysis was negative except for a trace of albumen.

X-ray examination of his chest at this time was reported upon as follows: "Thorax normal in shape. Some slight pleural thickening is seen in the right costo-phrenic and left cardiophrenic angle. There is general thickening of all bronchial branches. An occasional well calcified tubercle is visible in both lungs. Signs do not warrant the diagnosis of clinical tuberculosis in either lung at present. No evidence of fluid is found. The large pneumothorax on the left side, which was reported on previous examination, has entirely disappeared."

At this time a culture was made from the material removed from the crypts of his tonsils, and the growths reported as staphylococcus albus and aureus. A vaccine was made and a small amount injected intradermally. He gave a marked skin reaction in less than five minutes' time.

This case was considered of interest for several reasons, first, because of the apparent infrequency of pneumothorax occurring in an asthmatic. A careful search through a number of standard books and systems of medicine has failed to find mention of any relation between the two conditions. It is also unusual for pneumothorax to occur spontaneously in a lung apparently free from any pre-existing disease, and one in which no evidence of any active tuberculosis can be found. It is interesting to note that the removal of air from the pneumothorax gave decided relief from symptoms, although for a while it did not influence the position of the lung. This is probably due to the fact that it lessened the pressure of air within the cavity, even though it failed to influence the amount of compression of the lung. Finally, the marked and definite skin reaction to the autogenous bacterial protein, when there was no reaction to the stock preparations, is of interest. Among these stock preparations, staphylococcus albus was not included but the aureus was, and the two are closely akin.

The patient has shown decided improvement since he has been under treatment for the local condition of his throat and sinuses. He promises to have his tonsils removed in June. It is hoped that with the eradication of this focus and the clearing up of his ethmoids, his improvement will be even more marked.

1008 *West Grace Street.*

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PSYCHOTHERAPY.

By GRACE BRYAN ROLLINS, A. B., Richmond, Va.
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A great many of the books and subjects that a student is called on to review are by their very nature radical and consequently keep one strictly on his guard against all irrelevant matter. Ideas must be weighed and carefully evaluated before they can be set down by the reviewer as workable tools. But it has been a great pleasure to me to review Psychotherapy. The most of the material has come out of the little book (400 pages) by Hugo Munsterberg called "Psychotherapy." It is interesting to note the aim of the book and a little something of the writer. Munsterberg says of himself: "One word for my personal right to deal with these questions, as too much illegitimate psychotherapeutics is heard today. For me, the relation between psychology and medicine is not a chance chapter of my science to which I have turned simply in following up the various sides of applied psychology. And still less have I turned to it because it has been the fashion in late years. On the contrary, it has been an important factor in all my work since my student days. I have been through five years of regular medical studies, three years in Leipzig and two years in Heidelberg; I have an M. D. degree from the University of Heidelberg. In my first year as docent in a German university twenty years ago, I gave throughout the winter semester before several hundred students a course in hypnotism and its medical application. It was probably the first university course on hypnotism given anywhere. Since that time I have never ceased to work psychotherapeutically in the psychological laboratory. Yet that must not be misunderstood. I have no clinic, and while by principle I have never hypnotized anyone for mere experiment's sake but always only for medical purposes, yet I adjust my practical work entirely to the interests of my scientific study. The limitations of my time force me to refuse the psychotherapeutic treatment of any case which has not a certain scientific interest for me. and of the many hundreds whom I have helped in the laboratory, no one has ever had to pay anything. Thus my practical work has strictly the character of laboratory research." This statement almost explains itself. I should merely like to add that the work which he has done has been done in the laboratories of Harvard University. I must frankly state that from the very start I have been in hearty sympathy with the general attitude of the book as a whole. It, however, has one serious drawback and that is that it was written about fourteen years ago and hence can not be considered the last word on the subject.

Psychotherapy is the practice of treating the sick by influencing the mental life. It is well recognized that there are many people who think they are sick when they really are not. Again many people are cured by charlatans who can not practice anything but psychology on their patients. In the following brief thesis I shall explain the psychological basis for such cures, and attempt to show how psychotherapy may be used along with regular scientific medication in the treatment of diseased conditions.

In psychotherapy the physician attempts to analyze the mental life of the patient and then by the use of suitable suggestions hasten the progress of the disease. He attempts to break down the life of his patient into its component parts and understand him from a causal point of view. But we must not get the idea that because the patient is being taken to pieces and analyzed that the physician is taking away anything from the beauty and unity of his character. When a physician analyzes a person and dissociates his personality into his working components, he does so only in order that the parts may be put back in a more harmonized and efficient form, thereby forming a more efficient person. The horologist takes a beautiful watch which is broken. In a few moments he has resolved it into a mass of wheels, springs and screws. Upon causal observation one might say that the horologist had entirely ruined the beauty of the watch. Of course the beauty of the watch has been ruined for the time being; but he has brought about a situation whereby the working parts of the watch may be again put together on a much higher plane. After he has finished with it, it is not only as beautiful as ever but it is now an efficient timepiece. The same thing is true of the physician. He attempts to take the personality to pieces in order that he may put it back together on a basis where it may again be efficient. Only by analysis can the obsessing idea be found and its evil eliminated. Hence the aim of psychology is not to show that man's personality merely consists of a conglomeration of sensations associated in the central nervous system, but to better understand the working of his mind in order that defects in its

functionings may be remedied and his whole personality be established on a higher plane.

Hence we are to look at life from two angles. We ordinarily think of the purposive view of life in our daily contact with men. When one does a certain act we do not stop to attempt to rationalize that action into cause and effect. It is merely purposive to us. But the physician in his practice of psychotherapy is forced to look on his patients from a causal point of view. He is merely interested in cause and effect and not in the purposive attitude of life.

This assumption of cause and effect makes it necessary to assume some physical system in the body whereby this process may be propagated. Of course this must be the central nervous system. Thoughts are compounded by a multitude of chemical reactions passing along neurones. This can be traced from the simplest reflex act to the more complicated reflexes of the spinal cord up to the highly specialized associative system of the cortex of the brain. The changes which are brought about and result as thoughts, sensations, etc., are changes in the strength, vividness and fusion of retained and newly acquired sensual processes. The cells to which a sensation goes give it its quality. Thus sensations passing to cells in the inferior convolution of the temporal lobe give rise to the sensation of hearing, those passing to the post central gyrus give rise to the sensation of pain, touch, hot, cold, etc. The intensity of the nervous impulse stimuli depends upon the intensity of the external stimulus, or upon the associations which arise and furnish it with an emotional vividness. We may look at this from a different standpoint. Thus, if a certain part of the cortex of the brain is destroyed, a certain function is destroyed along with it. If the precentral gyrus is destroyed, we lose the ability to produce voluntary movement. If any of the sensory areas are destroyed, we lose the ability to perceive that special kind of sensation which normally is received at that area. On the other hand, we can note the psycho-physical parallelism through the developmental scale. In the lower animals the cortex of the brain is not developed comparable to that of the higher ones. Cortical development goes along parallel with intelligence. Again, some of the lower animals have certain sense organs developed very highly. In every case there is a corresponding increase in the acuteness of the animal for that special sense. Thus the American Eagle has the optic center very highly developed, i. e., it is grossly very large in comparison with the rest of its nervous system. At the same time this bird is especially noted for its acuteness of vision. Hence we are forced to the conclusion that the development of the mind of an individual is in every way parallel to the development of the brain—environmental conditions being equal. Hence the mind of the individual depends upon the structure and associations of the neurons. Each individual neuron acts as a working individual and may be considered in a way as separate from the rest of the neurons. Yet it is the working together of these neurons which makes personality possible. The situation is similar to that of a great nation. The nation is made up of millions of individuals, each of which is essentially different in almost every respect from the other. His interests, life, morals, religion, and practically everything is essentially different from that of his neighbor. And yet at the same time all these millions of people working together make a great nation possible. The same thing may be said of the central nervous system. It is made up of hundreds of millions of associated neurons. But we cannot say that personality is a lump sum of neurons. Personality must be considered as the working together, as the final output of the interrelations of these neurons.

Since we have considered in some length the attitude which the physician is to take with reference to the individual, let us touch on the subject of applied psychology with reference to the treatment of disease. There is no reason here to go into a description of the value of the attitude of the mind of the patient with reference to his disease. I believe that it is a well recognized fact that the attitude of the patient towards his recovery has a profound influence on it. An optimistic and pleasant attitude on the part of the patient is always desirable. But psychotherapy would include more than that. In the first place it would take for granted the well established usage that the above should always be and always is practiced by all good physicians. In addition to the above, psychotherapy would have its place in both diagnosis and therapy of many different kinds of diseases. In the diagnosis of diseased conditions psychotherapy deals most successfully with those persons who are on the borderline of insanity. Prominent among these are the psychasthenics, neurasthenics and

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hysterics. Here it acts like psychoanalysis in attempting to find the cause for the obsession and then curing it by psychological methods. On the other hand it deals with abnormalities in other parts of the body which are effected by the mind and abnormalities in other parts of the body which affect the mind. Hence as I have repeatedly stated the physician must take the causative standpoint in dealing with the personality of the patient, taking apart his mental workings and attempting to put them together on a higher plane.

But before we go further into the field and scope of psychotherapy, let us consider for a moment the basic principles back of the treatment. In the first place the physician may use two general principles: (1) Psychoanalysis, and (2) Suggestion. The physician attempts to arrive at the repressed complex which is causing the disturbance and, after finding it, by divers methods to rationalize it and release its energy or libido. Of course this method of therapy is limited entirely to the neurasthenics, psychasthenics, hysterics, etc. On the other hand, the field of suggestion is open to all forms of psychotherapy. By this means it is suggested to the patient that certain conditions come to pass until they actually come to pass. Suggestion is the closing of the path for the expression of the opposite idea, hence leaving everything free for the expression of the idea in common. Suggestion is very closely related to attention. The difference between suggestion and attention lies thus only in this: the motor response in attention aims towards a fuller clearness of the idea, for instance, by fixating, listening, observing, searching; while the motor response in suggestion aims towards the practical action in which the object of the idea is accepted as real. In attention, we change the object in making it clearer; in suggestion, we change ourselves in adapting ourselves to the new situation in which we believe.

Hypnotism may be also used as a form of suggestion. Hypnotism is merely an exaggerated suggestibility. The patient is brought into a condition where he takes everything that may come from the mouth of the hypnotist to be absolutely true, without the least question. The therapeutic effects of hypnotism have always been in question. The whole good effects of hypnotism lie in the assumption that the suggestions of the hypnotist are carried over into the waking state. This has been doubted by some authorities, yet Munsterberg seems to find that in some cases very excellent results may be gotten from hypnosis. For the general run of cases, however, he finds that suggestions in the waking state and light hypnosis generally give the best results. It seems that the suggestions are best received and best carried over when given in the light hypnoidal state.

In taking up the field of psychotherapy, I should like to state in the beginning that psychotherapy never cured any organic affection. Even in cases of neurasthenia where no known demonstrable organic disturbance is present, no definite cures can be promised. The patient may be cured of the particular obsessing idea but, unless other means have intervened, the patient is merely put back on the same plane where he was before the treatment. i. e., he still has his organic weakness and is liable again to gain another obsession if a suitable opportunity arises, although he may pass the rest of his life in peace. A sign of danger must be displayed in the use of hypnotism or suggestion in relieving the patient of certain organic pains. In many cases it has been found possible to relieve the patient of certain pains caused by organic disturbances. But this is to be carefully guarded against. Pain is nature's signal of danger and displays the fact that the organism is out of harmony with itself or its environment. When the pain is relieved, that does not cure the organic disturbance. But if the pain is alleviated, the patient may be hastened to his ruin because he does not treat or take care of the affected part and hence its destruction is hastened.

On the other hand there are diseases which may be caused by the influence of the mind. There is a surprising interrelationship between the mind and the body. The functioning of various organs depends upon a proper balance in the mind rather than in the organ itself. Especially to be noted among these are the digestive system and the heart. It is a quite well known fact that many people suffer from palpitation of the heart and digestive disturbances following any strong emotional outburst, especially fits of anger. But the mind exerts a more profound influence upon the individuals than this. The disturbance can be in only two possible places—either in the psycho-physical system itself or outside of it, that is in other parts of the body which are somehow under the influence of the mind. In the first case, when the disturbance occurs in the mind-brain

system itself, we ought to separate two large groups, first, those cases in which the system itself is normal and the disturbance comes from without, and second, those in which the constitution of the system itself was abnormal and led to disturbances under conditions in which a normal system would not have suffered. Accordingly we see that there may be an injury in the brain which will of necessity incapacitate the brain as far as that particular functioning area is concerned. Deafness, paralysis, etc., may be caused by this means. On the other hand stimuli from without may so upset the workings of the mind that serious complications set in. Here belong the phobias, obsessions, etc., of those who are on the borderland between normality and insanity. In the latter case, rather than in any other field, lies the real value of psychotherapy as such. Munsterberg has had a great deal of success with this class of people. He emphatically states that he has not had and cannot expect to have any kind of success with the totally insane. The organic defects of the brains of the insane are too much for the physician to cope with. The situation is similar to repairing a tire on an automobile. If the cut be a small one it may be vulcanized or a patch put in, but if the tire be old and nearly worn out with a large gash in it, the case is hopeless. Similarly with people, when the organic defect is small it may be patched over, but if there be a fundamental organic defect as there is with the insane, the case is hopeless and the physician is merely wasting his time by trying to use psychotherapeutic methods.

In the practice of psychotherapy, the attitude of the patient and the physician is very interesting and the right attitude on the part of each is very imporant. In the first place the patient must give his full co-operation to the physician. If the patient is not sincere, the treatment is surely going to be a failure. But, even despite every effort on the part of the patient to give full co-operation to the physician, it seems that he is predisposed to attempt to hide the obsessing complex. This is especially true in the practice of psychoanalysis where the obsessing complex is especially sought. But the physician has divers means for getting around this. By association tests, general history, dreams and a thousand and one odds and ends the physician patiently labors to come upon the obsessing complex and to overcome the natural resistance of the patient's mind. In the use of suggestion and hypnotism this phase of the situation is not nearly so important. Here there must be absolute co-operation on the part of the patient and a respect for the powers of the physician. The physician must conduct himself in such a way as to gain the respect of the patient; he must be sympathetic and sincere in everything that he does.

In many cases the trouble with the patient lies in his environment. Something may be wrong either at home or with his business. But the physician should be very careful in attempting to change these external conditions. Probably the trouble with a patient lies in the fact that his married life is not happy; but a physician should never suggest divorce. Yet in cases where slight changes may bring about desirable results these should always be advised. Plenty of sleep and rest should always be prescribed and the environment should be made as quiet as possible. The hustle and bustle of modern life has not the effect on the nerves that we are coming to be wont to believe. It is quite true that there has been a great change in life, but along with the change in life comes a change in what the nervous system of the person is used to. I may work with my window open to the hustle and bustle of the street and yet at the same time not be in the least disturbed. On the other hand, a person from the country who is less used to city life would be entirely distracted from his work. It is the sudden changes and emotional shocks which put a strain on the nervous system, not the mere quantity of stimuli; hence, nothing should be prescribed or allowed which will put an emotional strain on the life of the individual. This includes sexual excesses, narcotics, drugs, alcohol, etc. Even religion in the hands of the physician should be carefully used on account of its emotional power. Probably one of the best cures for a patient is to get him interested in something that will make him lead a real busy life. I do not mean that it should be necessary for him to sap his energy on some line, but he should be interested in something that will keep his attention busy. On the other hand I do not mean that mere employment will keep a person busy. A society lady may be busy night and day and yet not be employed. Why? Because her employment does not lead to an end. What is necessary is good, useful, interesting employment which has some attainable goal as its end.

But we have been talking only in general

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terms. Let us consider some specific methods. In considering these special methods, let us not forget that the general methods are always in force and that everything discussed with reference to them applies to the specific methods. In the first place it is absolutely necessary that the physician take the right attitude towards the patient's symptoms. In most of the cases the physician should take an indifferent attitude, because the expression of emotions in any way is liable to have a disastrous effect. The patient is liable to get either hypochondriacal or feel that the physician has no feeling for him at all. Again it is highly desirable that the physician should convince the patient that he is suggestible. If the patient feels that he is not suggestible, some simple tricks of suggestibility should be played upon him so as to gain his confidence. After his confidence has been gained, the physician may proceed with his suggestions. The suggestions may be given either in a formal or casual way. The physician may say, "Tonight five minutes after you have gone to bed you will be asleep," or he may casually suggest that the patient will sleep that night. Again the physician may express his surprise at the patient's improvement as she comes in the door. Even the use of charms may be good. This is especially valuable when these charms have a religious significance. Relics of the saints, holy waters, things used by other patients who have been cured, etc., all may be used. The very fact that so many people have been cured in the physician's office has a profound effect. Autosuggestion has likewise been used with a great measure of success. The repetition of set phrases often produces the desired result. This last fact has been used to its highest degree in the work of Coue and his famous expression: "Every day in every way I am getting better and better."

One of the most effective methods of suggestion is hypnotism, which may be brought about in a variety of simple ways. One of the most simple methods is to have the patient stare at a bright object. Other methods are to merely suggest that he is hypnotized. Even the use of bodily sensations may be helpful. In these and many other methods the success of the hypnotist depends absolutely on the patient. No one can be hypnotized unless he wants to be. It takes the co-operation of the patient. It has been found that light hynotism is all that is necessary, though in some cases it seems that deep hypnotism is required. After hypnosis has been accomplished, any means of suggestion may be used that seems necessary or fitting to the case. The patient may be informed that the condition will not occur again, or the idea may be sidetracked into different lines. After the cause for the obsession has been determined, the experience may be made to repeat itself in the mind of the patient, with the change that the obsessing idea is no longer present as it was in the original setting. Thus a person may have a fear for any kind of a hole in the ground or for high places. It may be determined that the origin for this was that the patient, early in his life, when hurrying very fast along a dark street, came very near running into a deep ditch. The patient is hypnotized and made to go through the experience several times just as he did actually with the exception that, instead of stopping before he came to the ditch he jumped over it. A few treatments of this kind generally produce a cure.

Dr. Munsterberg does not believe that all mental symptoms can be cured. In the first place he finds that a great deal depends upon the efficiency of the operator and his ability to meet situations better than his patients. He does not expect the average psychotherapist to have the success with his patients as he himself has had, if for no better reason than that he has given his whole life to the subject. But there are many conditions which he does believe are accessible to the cure by the average practitioner of medicine using psychotherapeutic methods. Of these I shall mention a few. Symptoms of this type may be found in nearly every small village throughout the country and are not taken from startling cases which come to the attention of the medical world only now and then. In the first place may be mentioned the phenomena of the appearance of visual images. These images are accompanied usually with some emotional stress. The images occur at the slightest suggestion of anything in any way related to the content of the image. Such symptoms may follow the patient for years and he may be unable to get rid of them at all. Again a person may feel that another person has some peculiar influence over his life. In everything that the individual does he feels that he is being controlled by this other person. Still others merely have a fear that they are going to be afraid of something, though the actual fear never happens. I myself have just

a slight trace of this. Before I go auto riding I feel that something is quite liable to happen and that I am going to be afraid when the machine goes too fast, the causal factor being a recent accident. But when I actually get in the machine and the corners appear, I lose all sense of fear and feel as secure as if the car were standing still. Along in the same category may be classed the fear of heights, bright lights, thunder, etc. In dealing with such cases Munsterberg usually uses a light state of hypnotism in giving his suggestions, though sometimes deep states are needed. It is interesting here to note the success with which he has cured patients of alcoholism and of the opium habit. Anyone who is familiar with the disposition of the opium eater knows the difficulties under which the physician must work who is trying to break off a patient from the use of opium. Sufficient is it to say that such patients lose entirely all sense of honor. The patient may stay in a sanitarium for several months and come out apparently entirely cured and within a week he will be back at his old tricks. Munsterberg reports quite a bit of success with such patients. He reports the very interesting case of a man who had gone so far that he was taking the enormous dose of forty grains per day (the maximum therapeutic dose is iiss. gr.) His physical condition was such that he was hardly able to limp into the hospital. By suggestions, under light hypnosis, that the amount be decreased from time to time, the patient finally cured himself; I mean he limited his own dose, for he had a whole bottle of opium tablets in his room. Personally, I do not think that such cures could be expected from all cases. We should be satisfied if anything like a considerable per cent of them were cured. On the other hand, the reports of Munsterberg on this subject seem very favorable. Here, however, it is more important than in any of the other cases that the physician have the full co-operation of the patient.

We have been considering the cures of mental rather than bodily symptoms. Let us for a few moments consider the effects of psychotherapy on some of the body symptoms. Here, as above, we are not to consider the influence of the ordinary good cheer of the hospital wards on the progress of the patients, but on the more serious cases. One of the most fruitful fields along this line is the one which deals with hysterical anaesthesia. Various parts of the body may lose all sensations. This may be due to a destruction of a part of the central nervous system. In such cases nothing can be done. There are other cases where there seems to be no organic trouble. In such cases, under the influence of suggestion, the patient may often recover from the anaesthesia in the affected part. On the other hand the physician has had considerable success with attempts to build up new motor areas for those which have actually been destroyed in the brain. This is especially true in cases of paralysis where a portion of the precentral gyrus may be destroyed. What the physician attempts to do is to substitute some of the lower centers which are situated in the medulla oblongata for some of the higher centers of the brain. The case of insomnia throws still further light on the subject. Here the physician must first make a diagnosis as to the cause for the loss of sleep, for a great many bodily conditions beside pain may prevent the process of sleep from enveloping the individual. After the hindering condition has once been determined, the art of suggestion may be employed to relieve the conditions. But, as I have indicated above, probably the best results have been obtained from the use of suggestion on the digestive system. Here Munsterberg has had his greatest success. Digestive disturbances of considerable moment have been entirely relieved and along with them disappear some affections of the heart which seem to exist without any organic symptoms.

The evaluation of any science or theory is a very difficult subject. I believe that conservative scientists who could be interested in psychotherapy would enjoy a reading of Munsterberg's book. He tries to be conservative in everything that he says. He, himself, does not think that the world will ever be upturned by psychotherapy. He admits that it has a limited field, but he does maintain that this field has been entirely neglected by the majority of physicians. The idea is no new one. It has been practiced from time immemorial in a variety of forms. However, until of late years it has always been connected with the church. Miraculous healings are associated with every religion from our own Christian religion down to the simplest religions of the savages. As yet, however, it has never been put on a scientific basis. The religious fanatic may produce miracles but he has no idea as to how they were produced. Even today the same principles are the basis for the success of several

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sects and some few charlatans. Whether it appear in the Emmanuel Church Movement, Christian Scientists or in the partial quackery of the chiropractors or what not, the principle is the same. But in none of these cases are these principles understood. They are practiced in a blind manner. There can be no doubt as to the fact that all of them do good, but the trouble with the situation lies in the fact that all diseased conditions are not subject to such treatment. Even the public is educated up to this point. Nobody would think of calling in a chiropractor if he thought he had appendicitis, nor would a Christian Scientist be called in to lance a boil or set a broken limb. But beyond these gross lesions the untrained mind of the public cannot go. Doctors are responsible for this condition. They should be so trained that they can make a distinction between those diseases which can be cured by psychotherapeutic methods and those which need some of the more gross and more physical methods of therapy. The medical profession will have to come to the recognition of the fact that psychology must be used in the treatment of disease as well as the knife and drugs are now used.

If we will look into the situation a little more fully, we may easily see the reason for this condition. The average run of physicians of the land are totally ignorant on the subject. Whatever psychology they happen to receive in their premedical work is so small as to be of no practical value. Now, even at the best medical schools the departments of psychology are insignificant or lacking altogether. This most important branch of medicine should become as much an integral part of the medical course as the study of bacteriology, physiology or pharmachology. When this period is reached, the public will come to have a great deal more respect for the medical profession and there will be no need to decide between the harum-scarum psychology of the quack and the really understood psychology of the efficient physician.

Correspondence

Whooping Cough

To the Anxious Mother:

In reply to your letter of recent date about Whooping Cough I am writing you about the best method we know for controlling the disease.

Whooping Cough is very dangerous to children under 5 years of age. One-half of all deaths from Whooping Cough occur in children under six months of age and 95 out of every hundred occur in children under six years.

Whooping Cough is catching. It is carried from one person to another by the moisture from the nose and mouth of a person who has the disease. Handkerchiefs, toys, drinking cups, roller towels and other articles recently used carry this moisture. They should be thoroughly washed and scalded, or, better boiled before they are used by any one else. Domestic animals, such as dogs and cats, may possibly spread the disease.

Whooping Cough is particularly catching just before the whooping stage which makes it difficult to control. Every child should be guarded from children and others who have a cold or cough.

Whooping Cough should be reported to the Health Office and houses will then have notices tacked on them so that babies and young children can be kept away from places where the disease is located. Children who have Whooping Cough should be kept to themselves, not necessarily confined in one room, but to the premises.

It is criminally dangerous for any one who has Whooping Cough to mingle in crowds even though he may be getting well. The bad practice which is so common of taking children with Whooping Cough to shows, churches, schools, etc.—MUST STOP.

Do not kiss babies. People with Whooping Cough should be 30 feet away from any other person. The State Board of Health recommends that every one with Whooping Cough wear a green ribbon on his sleeve, so well children will not go near him. Such device will become of great practical importance not only in Whooping Cough, but in the prevention of measles. Teach all children in the school room that the green ribbon means danger to them, and they must avoid going near a child wearing it.

There is a vaccine for Whooping Cough and it should be tried. Given to well children, it may keep them from having the disease. Again it may save the life of a child who has Whooping Cough.

Children should not be allowed to go about with others for four to six weeks from the time the disease starts.

A Field Director, State Board of Health.

Miscellaneous

THE STAUNTON MEETING OF THE MEDICAL SOCIETY OF VIRGINIA.

Why Staunton is a Place of Interest to Visitors.

By CHARLES MINOR BLACKFORD, M. D., Staunton, Va.

The annual meetings of the Medical Society of Virginia are always of interest and value to those who attend them, but the next meeting will be of unusual interest because of the place in which it will be held. Staunton is one of the richest towns in Virginia in points of historic interest and in attractions to visitors, especially to Virginians who are not familiar with the Valley, and aside from the instructive papers to be read and the pleasure of meeting old friends, a visit to Staunton is a matter to be remembered.

It is a strange fact, but none the less true, that most Virginians regard "Colonial Virginia" as having been confined to the tidewater region. This is not true, however, and the Valley is connected with several of the most romantic episodes of the pre-Revolutionary days. The Valley may be said to have been discovered in 1714 when Governor Spottswood and his band of "Knights of the Golden Horseshoe" marched up the Rappahannock River and crossed the "Blue Mountains," at Swift Run Gap, reaching the banks of the Shenandoah River in what is now Rockingham County. This expedition showed that the mountains were not impassable and that the Valley was habitable and easily cultivated, and a small but steady stream of settlers came into the new lands. German fugitives from the devastated Palatine had found refuge in the Cumberland Valley of Pennsylvania, and many of them crossed the Potomac and came into the Shenandoah Valley, as did numbers of Scotch-Irish Presbyterians who had found life in the old world almost unbearable under Queen Anne. On this account there were three distinct strains of settlers in the Valley—the English Churchmen, the German Lutherans and the Scotch-Irish Presbyterians, and the names of three of the Valley towns still preserve their memory—Woodstock, which is typically English; Edinburg, which is typically Scotch, and Strasburg, which is typically Palatinate.

In 1739 the House of Burgesses declared that all of Orange County which lay to the west of the summits of the Blue Ridge should be divided into two counties by "a line drawn from the headspring of the Hedgeman River," to the headspring of the Powtowmack River," and that all of the region to the northwest of that line should be known as Frederick County, and the remainder "to the uttermost limits of the colony" should be one county and one parish under the name of Augusta County and Augusta Parish. These counties were named for Frederick, Prince of Wales, son of King George II, and Augusta of Saxe-Gotha, his wife, and it is interesting to think that, had this prince lived and come to the throne instead of his brother who became George III, the history of America might have been changed. Augusta County as thus laid out, embraced a large part of what is now West Virginia, and all of what is now Ohio. Indiana, Illinois, Michigan and Wisconsin. It was to defend this part of Augusta County that Washington was sent with the Virginia militia on the ill-fated expedition under General Braddock. The countyseat was fixed at a new town, the site of which was given by John Lewis, a famous Valley pioneer, and the town was named Staunton in honor of Lady Staunton, wife of Governor Gooch, after whom Goochland County was named.

The lives of the early settlers in Augusta County were not lacking in excitement. There was more or less constant war with the Indians, and their French allies who occupied the country just beyond the Alleghany Mountains were a dangerous factor in the situation. On one occasion when John Lewis was very old and infirm, the Indians made a sudden attack on his home or "fort" at a time when all of his garrison was away, and for six hours the old man maintained a siege, firing from a porthole in the wall with his old wife by his side to reload the rifles. He kept off the assailants until the return of his sons and tenants, when the Indians fled. The old "fort" has been pulled down, but the house which now stands on its foundation, was occupied by Lewis during his last years, and his body is buried on an adjacent hill.

By the same act which created Augusta County, a new parish of the Church of England was established, and the parish church was located in Staunton. The first election held in the county was that for members of the vestry, but it was not until 1760 that a church building was erected. It stood on a site

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now partly covered by the present building and, as Church and State were then closely connected, this old edifice was connected with many interesting events during the years of the Revolution. Its principal claim to fame rests on an incident which occurred in 1781. Colonel Tarleton, of the British Army, had been detached by Lord Cornwallis to make a rapid raid into Virginia with the purpose of capturing the State officials. The House of Burgesses and Thomas Jefferson, who was then Governor, fled to Charlottesville, but were pursued so closely by Tarleton that but for the warning of Jack Jouett, a Virginian Paul Revere, they would have been imprisoned. With but ten minutes to spare, the officials escaped to Staunton, and on June 7, 1781, the House of Burgesses met in Trinity Church. The session lasted three weeks, during which General Thomas Nelson was elected Governor, and the House then adjourned to meet in Richmond in October.

Some ten miles north of Staunton on the Lee Highway stands an old building which for the past hundred and seventy-five years has been known as "The Old Stone Church." During the stormy days following Braddock's defeat, the people for miles around used this sturdy old structure as a refuge from Indian raids, and many romantic stories linger in local traditions about it. Within the past few years a reckless passion for alleged improvement led the congregation of this historic parish to rebuild the church and thereby to destroy the odor of antiquity which had enveloped it, just as the same feeling led the vestry of old Trinity Church in Staunton in 1846 to demolish their sacred and historic building and erect the one which now occupies its site.

Two residences stand in Staunton which have national interest. One of these is the former home of Alexander H. H. Stuart, Secretary of the Interior under President Fillmore, and one of the leading statesmen of the middle of the last century, and the other is the manse of the First Presbyterian Church which was occupied by the father of President Woodrow Wilson while he was pastor of that church and in which the late President was born.

The points of natural interest and beauty within easy reach of Staunton are widely known. Weyer's Cave is but a few miles distant; the "Blue Hole" and the Natural Chimneys at Mount Solon can be reached by an easy drive over an excellent road, and the view of the Rockfish Valley from Afton is spread out before the eyes of every railway passenger from Charlottesville to Staunton. A longer automobile trip is that from Staunton to Monterey, crossing the mountains amid scenes of indescribable beauty, especially when the great national forest reserve is decked in its autumnal splendor. It is a wonderful sight, and one which every Virginian should see. Aside from the professional and social inducements offered by the Society meeting, every member who is not familiar with "The Valley" owes it to himself to come to the gathering in Staunton.

Proceedings of Societies

The Piedmont (Va.) Medical Society

Held its semi-annual meeting in Charlottesville, May 31st, Dr. E. D. Davis, of Stanardsville, presiding. The afternoon session was held at the University of Virginia Hospital, at which place clinical demonstrations were given by Dr. L. T. Royster on Care of the New Born; C. P. Howze on Renal Calculi; Dr. I. A. Bigger on Sarcoma of the Femur; Dr. H. B. Mulholland on Diabetes Mellitus in a Child; Dr. W. H. Goodwin on Laryngeal Stenosis Associated with Stricture of the Oesophagus; Dr. S. H. Watts on Lymphosarcoma; Dr. H. L. Baptist on Cretinism; Dr. J. H. Neff on Cyst of Kidney, Bilateral Ureteral Obstruction; and Dr. J. S. Davis on Muscular Dystrophy. Following a banquet at the Coffee House, the program was resumed, and papers were read by Dr. John A. Hornsby, new superintendent of the University Hospital, Dr. Frank Helvestine, Jr., Dr. A. F. Voshell, and Dr. D. C. Smith, all of the University.

The election of officers for 1924-1925, held at this meeting, resulted as follows: President, Dr. J. F. Thaxton, Tye River; vice-presidents, Dr. J. Fulton Williams, Charlottesville, and W. C. Mason, Gordonsville; secretary-treasurer, Dr. Lewis Holladay (re-elected), Orange.

The Norfolk County Medical Society

Held its annual meeting on June 2nd, and elected Dr. R. L. Payne, Norfolk, president; Dr. Stanley H. Graves, Norfolk, vice-president; and re-elected Dr. Lockburn Scott, Nor-

folk, secretary-treasurer. The following were elected delegates to the Staunton meeting of the Medical Society of Virginia: Dr. J. D. Collins, Portsmouth, and Drs. Mary E. Roche, R. L. Payne, Chas. W. Doughtie and George W. Schenck, of Norfolk. Alternates were to be appointed by the delegates in case of need.

The Walter Reed Medical Society

Held its annual meeting in Newport News, Va., May 14 and 15, under the presidency of Col. L. A. Thompson, of the National Soldiers Home, Va. Dr. L. E. Stubbs was in his accustomed place as secretary. The attendance was good, and the meeting was from all angles one of the most successful the Society has ever held. Officers elected at this meeting are as follows: President, Dr. George W. Brown, Williamsburg; vice-presidents, Dr. G. W. McAllister, Hampton, Dr. M. B. Beecroft, Newport News, Dr. L. C. Brock, Smithfield, Dr. C. B. Courtney, Newport News, and Dr. J. J. Cullinan, National Soldiers Home; secretary, Dr. L. E. Stubbs (re-elected), Newport News; and treasurer (a newly created office), Dr. J. E. Marable, Newport News. The date and place of the next meeting, which is to be held in the Fall of 1924, will be decided later by the Executive Committee.

The Medical Society of Virginia, Maryland and the District of Columbia

Held its regular semi-annual meeting in Alexandria, Va., May 21, at which time an interesting program was enjoyed by those in attendance, and luncheon was served between sessions. Officers elected for the coming year are: President, Dr. Howard Fletcher, Warrenton, Va.; vice-presidents, Dr. George T. Klipstein, Alexandria, Va., and Dr. Thomas M. Foley, Washington, D. C.; recording secretary, Dr. William T. Davis; corresponding secretary, Dr. Joseph D. Rogers; and treasurer, Dr. Robert Scott Lamb. The three officers last named are all of Washington, D. C., and re-elected.

The Medical Association of The Valley of Virginia

Held its regular semi-annual meeting in Harrisonburg, May 29, Dr. J. M. Emmett, Clifton Forge, presiding. Dr. A. F. Robertson, Jr., Staunton, is secretary of the Association. The attendance was large and interesting papers were read. Luncheon was served the members between the morning and afternoon sessions. It was decided to hold the next meeting in Staunton, at the time of the meeting of the Medical Society of Virginia, October 14-17, instead of in Clifton Forge, as provided in the regular order.

Analyses, Selections, Etc.

General Review of the New Arsenical and Bismuthic Medications in Syphilis.

The author's conclusions are:

From the ensemble of our study of the new arsenical and bismuth medications we believe that we have the right to draw the following practical conclusions:

(1) The intensive therapeutics of syphilis remain, at least for the present, in the hands of medications containing trivalent arsenic and having as the fundamental active constituent the base of 606, namely, aminoarsenophenol. For intravenous administration 914 (novarsenobenzol) remains particularly indicated; for intramuscular injection the base of 606 (preparation 132) comes to fill up a gap in the therapeutics by permitting, by the means of a simple technic, the obtaining of therapeutic results identical with those obtained with the intravenous method with especial advantage of a decreased toxicity, evidenced by the absence of shock phenomena (nitritoid crises) and the possibility of intensive treatment of patients intolerant to intravenous injections.

(2) Concerning the use of bismuth compounds we think that it should be given the advantage of further researches upon the determination of the dosage and the indications relative to soluble and insoluble salts. Particularly recommended in cases of specific lesions resistant to mercury and arsenic, perhaps, as recent work seems to show, it may be indicated in neurosyphilis.

Personally, we ourselves are in favor of intramuscular injections of soluble salts, reducing thus to a minimum complications inherent to bismuth, particularly the buccal accidents. Bismuth medication seems to us to be a complementary medication, certainly more active than mercury because it is possible to use it in much higher doses, but which, at least for the present, must give place in concentrated attacks upon syphilis to the arsenicals, of which the serological activity is much more considerable.

(3) The mixed arseno-bismuth treatment

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under the conditions of technic which we have recommended, joining as it does the rapid treponemidical action of both products to the remarkable power which the arsenicals have of so quickly reducing the Bordet-Wassermann reaction seems to us to be a medicament with a future, particularly indicated where it is necessary to act vigorously and quickly.—(*M. Pomaret. Urol. cutan. rev., St. Louis*, 1922, *XXVI*, 760).

Bismuth Treatment of Syphilis.

Bismuth therapy has many advantages, especially if the signs of intoxication are well known, if the dose is well chosen, and the right preparation used. It is especially useful in visceral syphilis. It does not only cause the symptoms to disappear, but renders the Wassermann and the spinal fluid reactions negative. Whether, and in how far, this means that a cure is effected can not yet be answered, Spirobismol, Homburg, is a good preparation and combines the effect of the soluble and insoluble bismuth salts. It is superior to salvarsan in visceral lues. It contains in 1 c.c., 0.035 gm. metallic bismuth, 0.025 gm. iodid, and 0.015 gm. quinin. It is sterile and remains so when exposed to air. Intramuscular administration is not painful. It is absorbed very easily. The deposits cause no subjective discomfort. Even where 20 injections of 3 c.c. spirobismol, each, with a body weight of 60 kg., is made only 2 gm. metallic bismuth—that is, 0.033 gm. per kg. human body weight—is introduced. The average treatment gives no more than 1 to 1.2 gm. metallic weight.—(*J. Citron. Med. Klin., Berlin*, 1923, *XIX*, 1279).

The Truth About Medicine

In addition to the articles enumerated in our letter of March 27th, the following have been accepted:

Abbott Laboratories
  Procaine-Epinephrine Ampules, 1 c.c. (Abbott)
Armour and Company
  Anterior Pituitary Tablets, 2 grains (Armour).
  Pituitary Tablets, 2 grains (Armour).
  Parathyroid Tablets, 1/10 grain (Armour).
Lehn and Fink
  Sagrotan.
Eli Lilly and Company
  Iletin (Insulin-Lilly) U-40.
A. Lumiere Laboratories
  Cryogenine.
Mallinckrodt Chemical Works.
  Neoarsphenamine-Mallinckrodt, 0.15 Gm. Ampules.
  Neoarsphenamine-Mallinckrodt, 0.3 Gm. Ampules.
  Neoarsphenamine-Mallinckrodt, 0.45 Gm. Ampules.
  Neoarsphenamine-Mallinckrodt, 0.6 Gm. Ampules.
  Neoarsphenamine-Mallinckrodt, 0.75 Gm. Ampules.
  Neoarsphenamine-Mallinckrodt, 0.9 Gm. Ampules.
  Neoarsphenamine-Mallinckrodt, 1.5 Gm. Ampules.
Parke, Davis and Company
  Pituitrin "S" (Surgical)
    Ampules Pituitrin "S" (Surgical), 1 c.c.
Welty Company
  Deodorized Kerosene—Welty.
Wilson Laboratories
  Desiccated Parathyroid Substance—Wilson,
    Tablets Desiccated Parathyroid Substance—Wilson, 1/20 grain.
    Tablets Desiccated Parathyroid Substance—Wilson, 1/10 grain.

NEW AND NONOFFICIAL REMEDIES.

Cod-liver Oil—Squibb.—It has a content of fat soluble vitamin-A which is more than one hundred times that of best quality butter. For a discussion of the actions and uses of cod liver oil, see Useful Drugs. The average dose is 15 c.c. E. R. Squibb and Sons, New York. (Journal A. M. A., April 5, 1924, p. 1123).

Sagrotan.—A liquid composed of chlorcresol 8 per cent., chlorxylenol 4 per cent., soap 22 per cent., alcohol 9 per cent. and water 57 per cent. Sagrotan is an antiseptic and germicide. The germicidal efficiency of sagrotan is stated to be 2.5 times that of an equal quantity of phenol. While the germicidal efficiency of sagrotan is almost equal to that of compound solution of Cresol U. S. P., it has the advantage over this preparation in that it is almost odorless; also, it is claimed to be less toxic. Lehn and Fink, New York.

Procaine-Epinephrine Ampules, 1 c.c.—Procaine—Abbott, 0.02 Gm., epinephrine 0.00004 Gm. in Ringer solution, 1 c.c. The Abbott Laboratories, Chicago. (Journal A. M. A., April 12, 1924, p. 1199).

Deodorized Kerosene—Welty.—Kerosene which has been treated so as to remove the odorous constituents of commercial kerosene. Because of its solvent action on fats, deodorized kerosene-Welty is proposed for use as a pediculocide and as a means of removing dandruff and the detritus of wounds. Welty Company, Chicago.

Anterior Pituitary Tablets—Armour, 2 grains.—Each tablet contains desiccated pituitary substance (anterior lobe)—Armour (see New and Nonofficial Remedies, 1924, p. 226), 2 grains. Armour and Company, Chicago.

Pituitary Tablets—Armour, 2 grains.—Each tablet contains desiccated pituitary body—Armour (see New and Nonofficial Remedies, 1924, p. 226), 2 grains. Armour and Company, Chicago.

Parathyroid Tablets—Armour, 1/10 grain.—Each tablet contains desiccated parathyroid gland—Armour (see New and Nonofficial Remedies, 1924, p. 224), 1/10 grain. Armour and Company, Chicago.

Pituitrin "S" (surgical)—A slightly acid aqueous extract of the posterior lobe of the pituitary body of cattle, approximately six times the strength of Solution of Hypophysis U. S. P., containing 0.5 per cent. of chlorbutanol as preservative. For a discussion of the actions and uses of pituitary preparations, see Pituitary Gland, New and Nonofficial Remedies, 1924, p. 225. The preparation is supplied in the form of ampules pituitrin "S" (surgical), 1 c.c. Parke, Davis and Company, Detroit. (Journal A. M. A., April 19, 1924, p. 1265).

PROPAGANDA FOR REFORM.

The Resistance of Malaria to Quinin.—In 1917, reports began to appear that English soldiers in the tropics were being attacked by malaria that quinin would not cure. A report was published that quinin was ineffective in cases that were complicated by dysentery. An extensive study has demonstrated that quinin will cure malaria and that dysentery does not prevent the cure. In these cases the physician administered the quinin by mouth and made sure that it was swallowed. A study of the intramuscular injection of quinin demonstrated that necrosis of the muscle always occurred and that the absorption was less satisfactory than when the drug is given by mouth. It was shown that there was a profound fall in blood pressure when quinin is introduced intravenously, and one case of death and one case of serious sepsis are reported. It was also found that quinin is too irritating to be administered by rectum. (Journal A. M. A., April 5, 1924, p. 1125).

Antipneumococcic Serum Types I., II. and III. and Polyvalent.—The New and Nonofficial Remedies' description of antipneumococcus serum stated that thus far only the Type I. serum seemed to be on reasonably secure clinical ground. In consideration of favorable reports on the use of antipneumococcic serum which, in addition to the Type I. organism, also represented Types II. and III. and Group IV., the Council on Pharmacy and Chemistry accepted such "polyvalent" serums. At its 1921 annual meeting, the Council considered the available evidence for the use of anti-pneumococcus serum. The conclusion was reached that there was a preponderance of evidence against the employment of a serum which represented organisms other than Type I. Accordingly, the Council has omitted from New and Nonofficial Remedies all antipneumococcic serums which represented organisms other than Type I. (Journal A. M. A., April 5, 1924, p. 1138).

J. Bernard King's Radium Fraud.—For some years one J. Bernard King has been defrauding the public by selling earth as a cure for all the ills of the flesh, under the claim that it was a radium salt. A quietus has been put on King's scheme through the issuance of a fraud order, debarring him from the use of the United States mails, not only under his own name, but under the name of the "International Radium Company" and "Radium Products Company." King called his product "Ray-Cura" and claimed that it consisted of radium sulphate found "in the mountains of North America." Ray-Cura was marketed in cloth covered pads, which were composed of little sacks of a light colored substance of the consistency of flour. The alleged curative power existed in what Mr. King called radium emanations from this substance. The government investigation brought out that the contents of a pad which sold for fifteen dollars, cost less than six cents. The product was found not even to be radioactive and gave forth no radium emanation. (Journal A. M. A., April 12, 1924, p. 1215).

The Pharmacology of Carbon Tetrachlorid.—The most recent claimant for recognition as a means of removing hookworms is carbon tetrachlorid. The moderate cost of this chemical has enhanced its popularity. As the product appears in commerce in a variety of forms for use for different purposes, the A. M. A. Chemical Laboratory studied the quality of the market supply and elaborated standards that might serve to identify products suitable for medicinal purposes. As a result of this study, the Council on Pharmacy and Chemistry adopted standards for carbon tetrachlorid medicinal and listed the brands that complied with these standards. The remedy is comparatively safe, though serious symptoms and even death have been reported from its use, especially in patients addicted to the use of alcohol. Pharmacologic investigation has shown that the substance is relatively nontoxic because it is not readily absorbed from the intestinal canal. Severe intoxication results if the drug is introduced into the tissues directly through the circulation, as by inhalation, or if its absorption is favored by the presence of fats or of alcohol in the stomach and intestines. Hence, alcohol and fats—even milk, perhaps—are to be avoided when carbon tetrachlorid is administered. (Journal A. M. A., April 19, 1924, p. 1268).

Parathyroid Gland Therapy.—The administration of parathyroid gland has been reported of value in the treatment of a number of cases of tetany following the operative removal, or the injury of the parathyroid gland. It has prevented the attacks of tetany and of infantile tetany and seemed at times to have prolonged life, or to have saved it, while the injured glands regained their functions. It has been stated to be of value in some cases of gastric tetany, although in other cases the results were negative. Parathyroid gland has been used by some one or another at some time (and claimed to be of value) for conditions such as varicose ulcers, gastric, duodenal and cervical ulcers, tuberculosis sinus of the hip, paralysis agitans, eclampsia, etc., but that such disorders are regularly and favorably affected by parathyroid gland administration is a conclusion unsupported by controlled clinical evidence. (Journal A. M. A., April 19, 1924, p. 1286).

Tolysin Omitted from N. N. R.—Tolysin is the proprietary name under which the Calco Chemical Company markets its brand of neocinchophen. The Council on Pharmacy and Chemistry agreed to recognize this proprietary name, first, because the Calco Chemical Company promised to use novatophan (under which name the drug was introduced) or neocinchophen (the New and Nonofficial Remedies' name) as a synonym, thus avoiding, in a measure, confusion concerning the identity of the substance on the part of physicians, and second, because at that time, the firm was the only manufacturer of neocinchophen in the United States. Before Tolysin was accepted the Council required the discontinuance of the claim that the drug is free from cardiac depressant and renal-irritant action, except when limited amounts are used. Despite this requirement, advertising recently issued for Tolysin implies that it is free from toxicity. Further, the Calco Chemical Company determined to break its agreement to use neocinchophen or novatophan as a synonym. The Council has omitted Tolysin from New and Nonofficial Remedies because (1) it is marketed with unwarranted therapeutic claims, and (2) by the omission of the established synonym, neocinchophen (or novatophan), the physician is likely not to appreciate the character of the drug and its relation to cinchophen. (Journal A. M. A., April 26, 1924, p. 1381).

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Book Announcements

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1923. Cloth. Price, postpaid, $1.00. Pp. 72. Chicago: American Medical Association, 1923.

This volume contains the unabridged Council reports that have been adopted and authorized for publication during 1923. Some of the reports, due to their technicality, have only been abstracted in *The Journal;* others have been published in entirety, and still others have never been published elsewhere.

For one who wishes to be cognizant not only of what the Council has done, but why it has done it, the book will be very valuable, for it supplements New and Nonofficial Remedies with a more detailed account of the activities of the Council during 1923. New and Nonofficial Remedies records those proprietary remedies which have been accepted; Council Reports treats those which have been found unacceptable, and those which give promise of becoming valuable.

New and Nonofficial Remedies, 1924, Containing description of Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1924. Cloth. Price, postpaid, $1.50. Pp. 422+XXXIX. Chicago: American Medical Association, 535 North Dearborn Street.

Every physician is continually bombarded with literature, scientific and otherwise, concerning the newer remedies. He has neither the time nor the opportunity to investigate all even of the more promising preparations, and obviously he cannot try them upon his patients without investigation. He must know the composition of the article, must know that the claims under which it is marketed are true; in other words, he must have some critical statement of the actions, uses and dosage as well as of the chemical and physical nature of the product.

This official publication through which the Council on Pharmacy and Chemistry annually presents to the American medical profession disinterested, critical information about the proprietary preparations which the Council deems worthy of recognition has been extensively revised. In addition to the description of these proprietary preparations, the book treats those nonofficial remedies which, in the opinion of the Council, are worthy of consideration.

As the book is designed for ready reference, each preparation is classified, and each classification is preceded by a general and critical discussion of that group. These articles are written by those who may speak with authority on the separate subjects, and are a compilation of the best accepted opinions of today. It should be of great value to the physician who prescribes drugs and wishes information about the many new remedies in regard to which he is constantly receiving literature.

Differential Diagnosis. Presented Through An Analysis of 317 Cases. By RICHARD C. CABOT, M. D., Professor of Medicine and Professor of Social Ethics at Harvard University. Volume II, Third Edition, Revised. Philadelphia and London. W. B. Saunders Company. 1924. Octavo of 709 pages with 254 illustrations. Cloth, $9.00 net.

The Human Testis. Its Gross Anatomy, Histology, Physiology, Pathology, with Particular Reference to its Endocrinology, Aberrations of Function and Correlation to other Endocrines, as well as Treatment of Diseases of the Testes and Studies in Testicular Transplantation and the Effects of the Testicular Secretions on the Organism. By MAX THOREK, M. D., Surgeon-in-Chief, American Hospital; Consulting Surgeon, Cook County Hospital, Chicago; President, International Congress of Comparative Pathology, Rome, Italy, 1924; etc. Philadelphia and London. J. B. Lippincott Company. Octavo of 548 pages with 308 illustrations. Cloth. Price, $8.00.

Dislocations and Joint-Fractures. By FREDERIC J. COTTON, M. D., F. A. C. S., Visiting Surgeon to the Boston City Hospital; Associate in Surgery, Harvard Medical School, etc. Second Edition, Reset. Philadelphia and London. W. B. Saunders Company. 1924. Octavo of 745 pages, with 1,393 illustrations from drawings by the author. Cloth, $10.00 net.

The Anatomy of the Nervous System, from the Standpoint of Development and Function. By STEPHEN WALTER RANSON, M. D., Ph.D., Professor of Anatomy, Northwestern University Medical School, Chicago. Second Edition, Revised. Philadelphia and London. W. B. Saunders Company. 1923. Octavo of 421 pages with 284 illustrations, some of them in colors. Cloth, $6.50 net.

Pathological Technique. A Practical Manual for Workers in Pathological Histology and Bacteriology, including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By FRANK B. MALLORY, M. D., Pathologist to the Boston City Hospital, and JAMES HOMER WRIGHT, M. D., S. D., Pathologist to Massachusetts General Hospital and Assistant Professor of Pathology, Harvard Medical School. Eighth Edition, Revised and Enlarged. Philadelphia and London. W. B. Saunders Company. 1924. Octavo of 666 pages with 180 illustrations. Cloth, $6.50 net.

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Editorial

Some Approved "Dental" Work.

The Richmond Academy of Medicine is to be congratulated upon its successful efforts in putting "teeth" into the State Medical Practice Act which will prevent illegal and unlicensed practice of medicine in the city of Richmond in the future.

This action was the result of the Academy's endorsement of an Ordinance proposed by city councilman, Dr. L. T. Price, requiring that, after June 1, of this year, every one desiring to practice the Healing Art in the city of Richmond, except those now exempted by the State law, shall exhibit to the Commissioner of Revenue proper evidence that he is qualified for the practice of medicine by having previously passed an examination before the Virginia State Board of Medical Examiners.

Heretofore, any one, even an hobo, could get a license in the city of Richmond, if the applicant swore that he was going to practice the Healing Art, and paid the initial fee of ten dollars, plus a certain percentage based upon his net income for the year. This, of course, was in opposition to the State Medical Law, but the Commissioner contended that he was required to act only under the regulations of the City Finance Committee, and was not called upon to demand any specified qualifications from any applicant.

This state of affairs has been long recognized as being as reprehensible, as it was prejudicial to the professional and health interests of the city, and that, by its continuance, enforcement of the state statutes was made additionally difficult, but, owing to the ignorance of the people in such matters and to the constant advertising of illegal practitioners, it was apparently impossible to prevent this illegal practice; consequently, it is now believed that the work of the Academy of Medicine in Richmond, in finally securing the passage of the above Ordinance, after more than five months of strenuous labor and education, will be of great benefit to the city and the public, and of vital constructive assistance to the people of the state at large, and that the good work accomplished, will be followed by other cities in the state, and in this way, the interests of the people and of the profession will be better protected in the future against uneducated and unlicensed practitioners.

The city of Norfolk two years ago passed a somewhat similar Ordinance, and it has been effective in safe-guarding the best interests of that city. The Dental profession in this state, however, has had more vision than the Medical, for in formulating its practice act, it required that each dentist should present annually evidence of proper qualifications before licensure anywhere, and this was rendered doubly safe by the requirement in the law that each dentist should pay each year a small license fee to the state.

Primarily, it might be argued that this is not the duty of the physicians at all, but of the public, and that we should allow the people if they desire it, to legislate accordingly, and to have such methods of practice as they may please, but this is not, in our opinion, the true conception of the high standards of professional thought or endeavor. Physicians in part must blame themselves for the lack of interest manifested in professional matters by the public at large, for the profession has been archaic in many of its methods, and too detached and too much "set-apart," to correctly approach or interest the people. They should remember, however, that they are in a position to best interpret the things they see and translate into effective action the wishes and desires of their patients. This, indeed, is a moral obligation, and it is as urgent and as much the duty of the honest physician to protect the public against the menace of quacks and humbugs to health and civilization, as it is to fulfill the active duties of his profession in healing the sick and suffering, and pro-

tecting them against the menace of epidemics.

The physician must no longer be all-sufficient and reticent, as regards knowledge that might be of benefit to the laity, for if he condones quackery by failing to give information he possesses concerning its fallacies, he is guilty of a breach of trust to the people, as well as to his profession. No one is better or more generally informed on all such subjects than the physician, and the public will continue to look to the regular and established profession for guidance and assistance. No blatant self-advertising is required, or desired, but the public is entitled to dependable health information from responsible and authoritative sources.

The instruction must be personal, and the individual must be made interested, in order to become co-operative; in other words, if the ideals of Medicine, and the standards of Medical education are to be upheld, the public must be educated.

The Medical Society of Virginia at it last meeting, believing that this was necessary, organized the Virginia League for Health Education and Medical Progress. The plan is based upon the mutual co-operation of LAYMEN with PHYSICIANS and allied professions; its object is two-fold, to aid and encourage the promotion of personal and public Health Education, and to teach the value and achievements of Scientific Medicine. In other words, the people, for whose protection the medical profession has always worked, will be given a dignified statement of the aims and results of regular medicine, and they, in the light of this information and its revelations, will be called upon to fight this battle of altruism. Physicians are asking only for certain necessary and basic educational requirements for the practice of medicine, and possessing which, a man can practice, as he worships God, "according to the dictates of his own conscience."

It is the public that should be protected, and it should do its part in this important work of eliminating irregular practices and unscientific methods.

J. A. H.

WHAT ABOUT THE MENTALLY CRIPPLED?

In the Virginia State Penitentiary more than 25 per cent of the inmates are feebleminded and a number of others are mentally disturbed. Fortunately, however, these latter cases are rapidly recognized by the Advisory Board for Criminal Hygiene and transferred to proper institutions for treatment. The feebleminded cases are recognized but there is no place to which to transfer them. In reformatories and prisons throughout the country the percentage of those mentally subnormal runs from 25 to 50 per cent. Subnormal mentality runs high also among those who are sent to juvenile courts, prostitutes, almshouse inmates, orphan asylum children and problem children in general.

It has been estimated that about 3 per cent of school children are mentally subnormal and in the city of Richmond the classes for backward and defective children in the public schools contain nearly four hundred children. Dr. James K. Hall of Richmond has recently made the following statement: "Statistics prepared under the supervision of the Surgeon-General of the United States Army will tell you that twenty-one out of every one thousand of your young men drafted into the army during the late great war were feebleminded." As a result 69,000 men were rejected because of mental disorder of various kinds. There are said to be between 4,000 and 6,000 definitely feebleminded children in the State of Virginia and some 4,000 or more insane are supported by the State in its asylums.

If you can spare the time, read the above statement over again and try to contemplate the great loss in manhood, womanhood and money to the nation and the state these conservative figures imply, to say nothing of the shadow of sorrow which follows in their train. We are struggling and striving to do the best we can to maintain and take care of these unfortunates after they become a burden on society. What are we doing to prevent their becoming this burden? The answer is, practically nothing. Why is so little done? The answer is that the public is not educated to the value of mental hygiene and hence not interested. Thousands of dollars are spent on the physically crippled child to every cent spent on the mentally crippled child and it is a true statement to say that the latter is as helpable as the former and that the prospect of preventing mental cripples is as good as that of preventing physical cripples!

In some cities the National Committee for Mental Hygiene is establishing clinics to diagnose, study and direct the defective child and

in Richmond a child's diagnostic clinic with a department for psychiatric and delinquent children is to be established, provided sufficient funds can be raised. To raise these funds the City of Richmond, the Medical College of Virginia, the McGuire Newton Foundation, the City Health Department, the State Health Department, the Juvenile Court, the State Board of Public Welfare, the city schools and others are co-operating. It will cost about $24,000 a year to maintain this clinic and it is expected to raise about half this sum for two years from national associations. A full time paid pediatrician and a full time paid psychiatrist will be in charge and the rest of the paid and voluntary staff will be large and adequate. As this clinic will serve both the city and the state it is hoped that the physicians of the state will lend it their unstinted moral support.

B. R. T.

Public Health Summer Schools.

Surgeon-General H. S. Cumming, calls attention again to the new plan, suggested by the United States Public Health Service, for the purpose of combating preventable diseases. The letter and announcement follow:

In one capacity or another, directly or indirectly, you are engaged in combating preventable diseases which will cost the people of the United States this year over 3,000 millions of dollars, cause inestimable suffering and result in approximately 500,000 deaths.

Certain phases of preventive medicine are developing slowly, with consequent loss of health and life, primarily because adequately trained men and women are not available. In other fields of public health work, the personnel has increased so rapidly that there are many at work who have not had the opportunity for training which they desire.

To meet in some measure this emergency, Public Health Summer Schools will be conducted this year (at the suggestion of the United States Public Health Service) by Columbia University, the University of California, the University of Iowa and the University of Michigan. Here all those now engaged in public health work and all planning to have a part in preventive medicine may get intensive, systematic training under leading specialists.

The announcements of the Public Health Summer Schools are now ready and may be obtained upon application. Requests should be sent directly to the universities.

Training for Practicing Physicians in Preventive Medicine and Public Health

An increasing proportion of the 145,000 physicians and surgeons of the United States are engaging in various forms of preventive medicine and public health work. Pediatricians are beginning systematically to provide for the health of babies for a specified period of time after birth. An increasing number of private practitioners are giving periodic health examinations. Approximately 12,000 to 20,000 physicians are engaged on a part time or full time basis in special clinics and general dispensaries. Others are becoming employed by tuberculosis associations and various private health agencies. Still others are joining the staffs of county, municipal, state and federal health organizations.

For most of these various types of work, the practicing physician finds himself in need of additional training. Some have sufficient initiative and resourcefulness to obtain this training in the course of their new work. A considerable majority, however, may welcome a chance to obtain up-to-date instruction in a more systematic way. They will find in the public health summer schools of 1924 a unique opportunity for such training. Innumerable combinations of courses are possible. Every physician who has already entered or is planning to enter some phase of preventive medicine or of public health work in connection with his private practice or who intends to become associated with some health agency will be able, at any one of the public health summer schools, to find the type of training he needs to enable him to develop greater efficiency in his new work.

Advanced Degrees

During the next decade, hundreds and thousands of men and women will enter various kinds of public health work. A few will come from schools of public health with the M. D., D. P. H., or other special public health degree. A much larger number, probably, will enter public health work directly from private medical practice, from private nursing and from other occupations allied to public health work, without the advantages of special

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training for which an advanced public health degree stands.

The public health summer school has been established for such persons, also for physicians and others who have already entered the field of public health—sometimes rather suddenly—without having had the opportunity of special academic training. Those of either group may select at a conveniently located summer school two or more courses which will prove to have immediate value in public health work or in any form of preventive medicine, irrespective of the academic credit to be gained. Many, perhaps, will wish to consult at once the dean of the graduate school of the university at which they decide to do their work, so that a program of courses may be arranged which will lead to the C. P. H., A. M., M. S., Ph.D., Sc.D., D. P. H. or other advanced degree.

Most of the courses given by the University of California and the University of Michigan may be counted towards an advanced degree. Nearly all the courses offered by Columbia University and the University of Iowa are regularly scheduled for credit; those not specifically so indicated may be taken for credit by arrangement with the appropriate department or the dean of the college concerned.

PUBLIC HEALTH SUMMER SCHOOLS, 1924, CONDUCTED WITH THE CO-OPERATION OF THE UNITED STATES PUBLIC HEALTH SERVICE

Columbia University .....New York City
July 7 to August 15

John J. Coss, A. M., Director of the Summer Session. Haven Emerson, M. D., in charge of Public Health Courses.

University of California.....Berkeley
June 23 to August 2

John P. Buwalda, Ph.D., Dean of the Summer Sessions. John N. Force, M. D., in charge of Public Health Courses.

University of Iowa.....Iowa City
June 9 to July 18

C. H. Weller, Ph.D., Director of the Summer Session. Don M. Griswold, M. D., Director of the Public Health Summer School.

University of Michigan.....Ann Arbor
June 23 to August 2*

E. H. Kraus, Ph.D., Dean of the Summer Session. John Sundwall, M. D., Ph.D., in charge of Public Health Courses.

*Certain courses at the University of Michigan will continue two additional weeks.

Requests for announcements should be addressed to the Deans of the Summer Sessions.

News Notes

Medical College of Virginia Finals.

Commencement exercises of the Medical College of Virginia were held in Richmond, May 31 to June 3, inclusive, an interesting program being enjoyed by the alumni who attended. Exercises started on the evening of May 31, with "stunt" night, at which time also letters were presented a number of the members of the baseball and tennis teams. The baccalaureate sermon was delivered by Rev. George E. Booker, D. D., at Monument Methodist Church, on Sunday, June 1. The alumni began registering on Monday and the board of visitors held their annual meeting that morning. In the afternoon a baseball game was staged between the alumni and the graduating classes, and the reunion dinner was held that evening at Commonwealth Club. Dr. S. C. Mitchell, of University of Richmond, formerly president of the Medical College of Virginia, was the principal speaker on this occasion, and Dr. W. L. Peple, Richmond, toastmaster. At this dinner plans were discussed for the enlargement and improvement of the College and its hospitals.

The alumni held a business meeting on Tuesday morning, at which time papers were read by several members. At the election of officers of the Alumni Society, Dr. Manfred Call, Richmond, was re-elected president; Dr. Guy Harrison, Richmond, first vice-president; Miss Maud Lambert, Roanoke, second vice-president; Dr. Everett E. Watson, Salem, third vice-president; Miss Nora Spencer Hamner, Richmond, fourth vice-president; Dr. F. H. Beadles, Richmond, treasurer; and Mr. L. C. Bird, Richmond, holds over as secretary until appointment is made by the executive committee. Following this meeting, luncheon was served at the College.

There was an unusually large attendance of the class of 1914. They held a reunion dinner at Murphy's Hotel on Tuesday evening and decided to make their reunion an annual affair. For this purpose they formed a permanent organization with Dr. Howard Urbach, Richmond, as president, Dr. Henry Stern, Richmond, vice-president, and Dr. G. Bentley Byrd, Norfolk, secretary. This class pledged

itself to support the building and endowment campaign which the college proposes to put on in the near future.

At the final exercises on Tuesday evening, Rear Admiral Cary T. Grayson, Washington, D. C., was the principal speaker. The exercises closed with a dance in honor of the graduating classes at Commonwealth Club. There were sevetny-four graduates in medicine, thirty-seven in dentistry, twenty-one in pharmacy and seven in nursing, representing fourteen states, District of Columbia and Porto Rico. The following are hospital appointments for the graduates in medicine, as announced on the last evening:

Memorial Hospital, Richmond—Drs. Robert W. Bess, Hinton, W. Va., Boyd F. Brown and Aaron Seldes, Richmond, Ernest C. Shull, Winchester, Clive A. Thompson, Sparta, N. C., Coy T. Upchurch, Apex, N. C., and G. F. Hale (dental interne).

Johnston-Willis Hospital, Richmond—Drs. Donald S. Daniel, Weldon, N. C., and Samuel E. Hughes, Jr., Danville.

Retreat for the Sick, Richmond—Drs. Doris C. Boatright, Gate City, and John E. Dougherty, Elkins, W. Va.

St. Elizabeth's Hospital, Richmond—Drs. Wm. A. McGee and James M. Whitfield, Jr., Richmond.

St. Luke's Hospital, Richmond—Drs. Henry A. Hornthal, Norfolk, and Clay W. Evatt, Baltimore, Md.

Stuart Circle Hospital, Richmond—Drs. John R. Chitwood, Sylvatus, and Harry H. Ware, Jr., Dunnsville.

Tucker Sanatorium, Richmond—Dr. Giles S. Terry, News Ferry.

George Ben Johnston Memorial Hospital, Abingdon, Va.—Dr. Wm. H. McCarty, Chatham Hill.

Cumberland Hospital, Brooklyn, N. Y.—Dr. Rudolph Goldberg and Leo L. Klein, of New York City, and George Schoenholtz Bronx, N. Y.

Holy Family Hospital, Brooklyn, N. Y.—Dr. W. E. Geiger and Harold Neifeld, Brooklyn, N. Y.

Chesapeake & Ohio Hospital, Clifton Forge, Va.—Dr. Albert C. Van Reenan, Onoto., W. Va.

Watts Hospital, Durham, N. C.—Dr. Francis N. Bowles, Chester.

Pittman Hospital, Fayetteville, N. C.—Dr. Ryland A. Blakey, Richmond.

Harrisburg General Hospital, Harrisburg, Pa.—Dr. Ward E. Newcomer, McClellandtown, Pa.

Hazard Hospital, Hazard, Ky.—Dr. David W. Kelly, Jr., Culpeper.

State Hospital, Hazelton, Pa.—Drs. James L. Blanton, Tobaccoville, and Henry T. Garriss, Margarettsville, N. C.

St. Mary's Hospital, Hoboken, N. J.—Drs. Luther R. Lambert, Welch, W. Va., and Clark Lemley, Star City, W. Va.

Chesapeake & Ohio Hospital, Huntington, W. Va.—Dr. William C. Kappes, Richmond.

Jersey City Hospital, Jersey City, N. J.—Dr. Alvah W. Bickner, Jr., Rutherford, N. J.

St. Francis Hospital, Jersey City, N. J.—Drs. Geo. T. Colvard, Jefferson, N. C., and William F. Matthews, New Church.

Virginia Baptist Hospital, Lynchburg, Va.—Dr. Wm. E. Smith, Farmville.

Grace Hospital, New Haven, Conn.—Dr. Chester E. Haberlin, Bridgeport, Conn.

Elizabeth Buxton Hospital, Newport News, Va.—Dr. Alvin D. Lamberth, New Upton.

Gouverneur Hospital, New York, N. Y.—Drs. John A. G. Davis, Jr., Greenwood, and Thomas B. Washington, Woodford.

Lincoln Hospital, New York, N. Y.—Dr. Nathan B. Feinberg, New York, N. Y.

Metropolitan Hospital, New York, N. Y.—Dr. Lula W. Garst, Richmond.

Ancon Hospital, Panama, C. Z. — Dr. George W. Black, Mt. Holly, N. C.

St. Thomas Hosptial, Panama City, C. Z.—Dr. Eduardo G. Morales, Caguas, Porto Rico.

Central State Hospital, Petersburg, Va.—Dr. Allen B. Sloan, Charlotte, N. C.

Jefferson Hospital, Roanoke, Va.—Dr. John M. Bishop, Ivanhoe, Va.

Lewis-Gale Hospital, Roanoke, Va.—Dr. J. Albert Avrack, Richmond.

Roanoke Hospital, Roanoke, Va.—Dr. John M. Bailey, Richmond.

Grassland's Hospital, Valhalla, N. Y.—Dr. Randolph McCutcheon, Hominy Falls, W. Va.

St. Elizabeth's Hospital, Washington, D. C. Dr. Lucy S. Hill, Locust Dale.

James Walker Memorial Hospital, Wilmington, N. C.—Drs. John W. Straughan, Siler City, N. C., and William N. Williams, Pine Bluff, Ark.

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Memorial Hospital, Worcester, Mass.—Dr. Rachel F. Weems, Ashland.

Fordham Hospital, New York, N. Y.—Dr. Charles Phillips, Brooklyn, N. Y.

City Home Hospital, Richmond, Va.—Undergraduates R. R. Goad, E. H. Hearst and A. G. Martin.

Hygeia Hospital, Richmond, Va.—Undergraduates Waylon Blue and P. H. Wiseman.

Sheltering Arms Hospital, Richmond, Va.—Undergraduates H. C. Alexander and A. L. Carson, Jr.

Soldiers' Home Hospital, Richmond, Va.—Undergraduate G. W. Booth.

The other graduates in medicine are:

Dr. Ruth G. Aleman, New Orleans, La.
Dr. Timothy S. Buckley, Richmond.
Dr. Wesley G. Byerly, Cooleemee, N. C.
Dr. Carl J. Carter, Fairmont, W. Va.
Dr. David J. Dolen, New York, N. Y.
Dr. Joseph S. Feraca, New York, N. Y.
Dr. Samuel J. Ferguson, Wayne, W. Va.
Dr. Robert B. Groves, Lowell, N. C.
Dr. Charles E. Holderby, Buffalo Lithia Springs, Va.
Dr. John R. Howard, Coats, N. C.
Dr. Benj. E. Hunt, Jeffs, Va.
Dr. Thos. F. McDermott, New York, N. Y.
Dr. Roy L. Noblin, Nelson, Va.
Dr. Williard S. Parson, Wilkinsburg, Pa.
Dr. Ulvert O. Sanders, Oceana, W. Va.
Dr. David B. Stuart, Cumberland, Va.
Dr. Adrian X. Urbanski, Perth Amboy, N. J.
Dr. Francis W. M. White, Windsor, N. C.
Dr Pauline Williams, Richmond.

Correspondence Course for Mothers.

Feeling that a wide distribution of the rudiments of knowledge in regard to the care of the pregnant woman and of her offspring might reduce the frightful mortality among the child bearing woman and her child, the State Board of Health of Virginia has distributed a set of pamphlets that is called a "Correspondence Course for Mothers."

Part I consists of six lessons dealing with the pregnant woman, her delivery and her lying-in period. Part II teaches the care of the infant in six lessons.

These pamphlets are distributed one at a time to a group of women who are pregnant and have shown a sufficient interest to enroll themselves into a group for instruction. After the lesson has been studied and the questions upon the back of the leaflet have been answered and sent in, the next leaflet is sent and so on until the course has been completed.

Mrs. J. W. Farris, a trained nurse, who has charge of this correspondence course, answers all of the questions that the students ask and keeps the ball rolling.

There are, we know, hundreds of women of our State who gain their information in regard to pregnancy from their neighbors who are often as poorly informed as the seeker after information. Even those mothers who are delivered by doctors are poorly instructed oftentimes because the doctor sees them only at delivery, unless they develop something pathological. The doctors do the best they can but it is asking a great deal of the busy man to have him give detailed instruction in regard to all of the thousand and one things that a pregnant woman should know.

These lessons are very conservative. The information is of a very general character. The case is urged to take her troubles to the doctor.

A set of lessons will be sent to each Virginia doctor from the Board of Health very shortly. We hope you will take the trouble to read them and recommend them to your pregnant women.

GREER BAUGHMAN, M. D.

Another Hospital for Crippled Children Dedicated.

The fifth in the chain of Shriners' hospitals for crippled children was dedicated in St. Louis, June 1. The other four in operation are in Shreveport, La., San Francisco, Portland, Ore., and the Twin Cities of Minneapolis and St. Paul, Minn., in addition to which there is the "mobile unit" in the Hawaiian Islands, which has given treatment to a large number of children in Honolulu. The Shrine proposes to build and maintain at least twenty of these hospitals, placing one in reach of every crippled child in this country, regardless of creed and race; the only restrictions are that the child must be suffering from some ailment coming in the domain of orthopedic surgery, the case must offer reasonable hope of cure, and the parents must be financially unable to pay the cost of treatment in some other hospital. Each Shriner is assessed $2 a year for this hospital fund.

It is announced that hospitals are also in course of construction at Springfield, Mass.,

and Montreal, Canada, and that sites have been purchased for hospitals in Philadelphia and Chicago.

Are You Planning to Attend the Staunton Meeting?

If not, you should read the interesting historical sketch of Staunton and the celebrated Valley of Virginia, by Dr. Charles Minor Blackford, which appears under the "Miscellaneous Department" in this issue of the Monthly, and you will feel impelled to visit this interesting section of the State. What better time than the Fall, when the country is at its loveliest to take an automobile trip, and make one of your stops at Staunton! An interesting program is being arranged and the Augusta County doctors are working hard to make this a "big" meeting. You can help by lending your presence. The "Stonewall Jackson" will be headquarters for the meeting. Make your reservations as soon as possible.

A. M. A. Meeting.

As we go to press, doctors from all over the country are gathering in Chicago, to attend the meeting of the American Medical Association. Dr. Ray Lyman Wilbur, Stanford University, Calif., is president, Dr. William A. Pusey, Chicago, president-elect, and Dr. Olin West, Chicago, secretary. The *A. M. A. Bulletin* states that this is really the seventy-seventh year of the Association, but will be only the seventy-fifth meeting, owing to the fact that two annual sessions were missed during the Civil War. It is expected that fully 10,000 fellows will attend.

A feature of unusual interest in connection with this meeting was the banquet in honor of Dr. George Henry Simmons on the evening of the 9th, at which time was also held the ceremony of presentation of his portrait. Dr. Simmons, for twenty-five years editor of the *Journal of the American Medical Association*, requested that he be retired in this his seventy-third year, and the banquet was given that the medical profession, educators, scientists, and other friends, might express appreciation to him for the outstanding service he has rendered to medical literature, medical education, medical organization, science and the general public welfare.

Dr. and Mrs. Beverley R. Tucker

Have returned to their home in Richmond, after a short visit to Philadelphia.

Medical Intelligence Bureau Organized in Connection With Hot Springs National Park, Ark.

Under the auspices of the Garland County Medical Society, Hot Springs, Ark., a Medical Intelligence Bureau has been organized for the purpose of placing before the medical profession of America a clearer and more exact knowledge of the therapeutic values of the waters of the Hot Springs National Park, of Arkansas. Members of the profession are invited to correspond with the Bureau relative to cases which have not responded to treatment at home, and as to the advisability of sending them to Hot Springs for a course of treatment. Colonel L. M. Maus, retired, Medical Corps, U. S. Army, has been appointed Intelligence Officer and placed in charge of the Bureau.

This is the only health resort in America owned and controlled by the United States Government. Several years ago, the Interior Department constructed a public bath house for the poor of the country, where large numbers, regardless of race, color or sex, are treated gratuitously during all seasons of the year, by medical officers detailed from the Public Health Service. The Hot Springs of Arkansas were set aside by Congress in 1832 as a "National Sanitorium" for the people of America for all time. Frequent physiological and chemical examinations have been made of these waters by government experts, and, with few exceptions, they have been reported to be as strongly radio-active as any European Springs.

The Southside Virginia Medical Society

Will hold its regular quarterly meeting on Tuesday, June 17th, at Victoria. Dr. George H. Reese, Petersburg, and Dr. R. L. Raiford, are president and secretary, respectively. Dr. Thomas G. Hardy, Farmville, councilor of the Medical Society of Virginia from the fourth congressional district, has called a meeting of delegates from the county societies in this district, to convene at this meeting, to nominate his successor as a member of the council. Dr. Hardy's term of office expires this Fall.

Resident Physician at Pine Camp, Richmond.

Dr. William P. Bittinger, who since his graduation from Medical College of Virginia, last year, has been an interne at Johnston-Willis Sanatorium, this city, has accepted the position of resident interne at Pine Camp,

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Richmond, Va., and will enter upon his duties on July 1st. He is a brother of Dr. Samuel M. Bittinger, assistant superintendent of the North Carolina Sanatorium for the Treatment of Tuberculosis, Sanatorium, N. C.

C. L. Plunkett, of Medical College of Virginia, will be undergraduate interne at Pine Camp, this year.

Acting Health Officer of Richmond.

Dr. B. B. Bagby, health officer of Henrico County, for the past year has been appointed by Dr. E. C. Levy as acting health officer of Richmond and has entered upon his duties here. Until September 1st he is filling the vacancy caused by the resignation of Dr. C. C. Hudson, who on May 1st accepted the position as health officer of Greensboro and Guilford County, N. C. Prior to taking charge of the health unit of Henrico County, Dr. Bagby was a practicing physician in West Point, Va., and was widely known also as a student of preventive medicine.

Married.

Dr. Hunter Holmes McGuire and Miss Catharine Skelton Bemiss, both of Richmond, May 24.

Dr. Sidney Trattner and Miss Leah Whitlock Binswanger, both of Richmond, May 5.

Dr. James M. Fadeley, Washington, D. C., and Miss Marian Parker, Berryville, Va., in New York City, May 2. Dr. Fadeley is a son of Dr. and Mrs. G. B. Fadeley of Falls Church, Va.

The Graduate Nurses' Association of Virginia

Met in Roanoke, Va., May 27-29, under the presidency of Miss L. L. Odom, of Sarah Leigh Hospital, Norfolk. There was a good attendance and the program was most interesting. It was announced that $2,300 had already been received from presentation of the nurses' pageant, "Signal Fires," and that full reports had not yet been received from all the cities. The nurses have also raised more than $5,000 on the foundation fund with which they propose to establish a chair of nursing at the University of Virginia.

Election of officers was as follows: President, Miss Agnes Randolph, of the State Board of Health, Richmond; vice-presidents, Miss L. L. Odom, Norfolk; Miss Hattie V. Norris, Roanoke; and Miss Evelyn Hill, Harrisonburg; secretary, Miss Alice Dugger, Red Cross Supervisor of the State Board of Health, Richmond; treasurer, Miss Florence Bishop, Staunton; new member of the board of directors, Miss Ethel Smith, of Craigsville.

Dr. J. C. Cutler,

Newport News, Va., was a recent visitor in this city, having come here on business.

Dr. M. B. Linkous

Announces his removal from Cambria, Va., to Blacksburg, Va.

Dr. R. A. Bennett,

After practicing at Huddleston, Va., for a number of years, located in Bedford, Va., the first of June.

Dr. S. C. Draper,

Who recently accepted a position with the Relief and Pension Department of the Norfolk and Western Railway Company, at Norfolk, Va., has been transferred to Bluefield, W. Va.

Dr. Paul C. Colonna,

Formerly of Virginia, but who is now practicing in New York City, will sail June 21st, by the Saxonia, for a ten weeks' trip to the Orthopedic clinics of England, France and Italy.

Dr. James A. Wilkins,

Of Lynchburg, Va., has located at 550 Monroe Building, Norfolk, Va., for the practice of internal medicine. Dr. Wilkins graduated from the University of Virginia in March, 1919, and since this time he has served internships in the University of Virginia Hospital and Lenox Hill Hospital, New York City. For the past three years Dr. Wilkins has been on the staff of the Mayo Clinic in Rochester, Minnesota, as a Fellow in Medicine.

Dr. J. Shelton Horsley,

By invitation, gave an address before the Florida State Medical Association, on the occsion of their annual meeting in Orlando, May 13th, his subject being "Surgery of the Stomach."

Dr. H. Marshall Taylor, an eye, ear, nose and throat specialist of Jacksonville, who graduated from Medical College of Virginia in 1911, was president this year. Dr. Taylor has done much excellent work in the promotion of the propaganda for prevention of esophageal burns by swallowing lye. He has been much interested in this subject and has been instrumental in securing legislation in several states for compelling manufacturers to label concentrated lye as poison.

Dr. William L. Brent,

Of Colonial Beach, Va., is now in Baltimore, Md., where he is specializing in pediatrics. He is visiting physician to Nursery and Child's Hospital, and University Hospital, and pediatrician to the German Orphanage.

Dr. C. D. Hopkins,

Formerly of Rocky Mount, Va., who graduated from Medical College of Virginia last year, after spending several months at Johns Hopkins Hospital, Baltimore, and Flushing Hospital, New York, recently located in Richmond, Va., where he is associated with Dr. W. B. Hopkins, at 421 East Franklin Street, in the practice of diseases of the eye, ear, nose and throat.

Dr. and Mrs. A. L. Tynes,

Staunton, Va. have just returned from Baltimore, where they went to attend the commencement exercises of Goucher College, their daughter being among this year's graduates.

Dr. P. L. Hill, Jr.,

Gaffney, S. C., who has been in this country about a year, plans to return to his work in Korea, in August. He has recently been taking up special work on the subject of gastro-intestinal diseases in Chicago. Dr. Hill, who is an alumnus of the Medical College of Virginia, attended commencement exercises of that school in Richmond, early this month.

Dr. and Mrs. Otis Marshall

And some friends, of Culpeper, Va., last month enjoyed a motor trip through the Valley of Virginia and visited friends in Shepherdstown, W. Va., and Winchester, Va.

Dr. Marshall W. Sinclair,

Formerly of Newport News, Va., but who has recently been connected with Anderson County Hospital, Anderson, S. C., has accepted the position of pathologist with St. Luke's Hospital, Bluefield, W. Va., and expected to enter upon his new duties on June 15th.

Dr. B. P. Seward,

Recently of Surry, Va., has moved to Richmond, and opened offices at 320 West Grace Street, for the practice of medicine. Dr. Seward has many friends in Richmond, having graduated from Medical College of Virginia in 1922, after which he served an internship at Stuart Circle Hospital, this city.

Dr. F. Musgrave Howell,

Lynchburg, Va., has just returned from St. Louis, Mo., where he has been taking post-graduate work in obstetrics and anesthesia at the Barnes Hospital and St. Louis City Hospital. His offices are at 816 Church Street, Lynchburg, instead of on Court Street, as stated in May journal.

The Maryland Cancer Committee,

Through Dr. Joseph Colt Bloodgood, Baltimore, recently issued a bulletin to members of the medical and dental professions, urging upon them the need of injecting the layman with the idea that "correct information in regard to cancer and some other diseases often leads to their prevention, or to a larger probability of a permanent cure." Too much stress cannot be laid on the need of these professions bringing these life-saving facts before the people of this country.

Dr. and Mrs. Albert Siewers

And little daughter, of Syracuse, N. Y., are visiting the former's old home in Richmond. Dr. Siewers, who graduated from Medical College of Virginia in 1918, is now limiting his work to neurology and psychiatry in Syracuse.

Medical Review of Reviews

Announces a change of policy and a new editorial board which began with the March issue. The journal will be an international review of medicine and surgery; the index medicus will be discontinued and abstracts from medical literature will be given in its place. A foreign correspondent will give many interesting items from abroad.

The editorial board is composed of fourteen prominent doctors from this country and abroad. From time to time the various issues will be devoted to special subjects.

Dr. Lewis Holladay

And daughter, of Orange, Va., motored to Hampden-Sidney College, last month to visit Dr. Holladay's sons.

Dr. J. A. McIntyre,

A native of Richmond, Va., and a graduate of Georgetown Medical School, class of 1902, has been detailed as chief of the Insurance Medical Section of the U. S. Veterans' Bureau.

Dr. J. Thomson Booth,

Ashland, Va., was elected surgeon of the Camp of Sons of Confederate Veterans, at their organization meeting held in Ashland, the middle of May.

Dr. George P. Hamner,

Lynchburg, Va., has been elected president of the Piedmont Field and Stream Club, in that place.

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Dr. Lawrence T. Price

Was re-elected president of the Richmond Chapter, Virginia Polytechnic Institute Alumni Association, at its annual meeting held the latter part of May.

Dr. and Mrs. W. O. Smith,

Altavista, Va., returned home about the middle of May, from Atlanta, Ga., where they went to attend the Southern Baptist Convention.

Dr. and Mrs. R. C. Whitehead,

Norfolk, Va., recently visited relatives in Amherst, Va.

Dr. Carrington Williams,

Richmond, has been elected a member of the board of directors of the Morris Plan Bank of Richmond, Va.

A Number of Doctors go as Delegates to State Democratic Convention.

The following are names of some of the doctors who were elected delegates to the State Democratic convention in Norfolk this month: Dr. M. C. Oldham, Lancaster; Dr. F. W. Lewis, Morattico; Dr. B. A. Rice, Forest Depot; Dr. W. M. Gibbs, Bellevue; Dr. F. C. Pratt, Fredericksburg; Dr. E. L. Kendig, Victoria; Dr. W. D. Kendig, Kenbridge; Dr. T. W. Dew, Bumpass; Dr. M. B. Linkons, Blacksburg; and Dr. A. J. Hurt, Chester.

Children in the Federal Courts.

All but two States have laws providing for juvenile courts for boys and girls. All but one State have probation systems through which the delinquent child may be given a chance to make good under trained supervision. But our Federal law makes no distinction between adults and children. The youngster who defaces a mail-box, steals a ride on a train across State lines, or in some other way breaks the Federal laws must, according to the law, be dealt with on the same basis as an adult offender. A bill which would establish a probation system in United States courts has been favorably reported in the House of Representatives.

Dr. Hugh H. Young,

Of the Johns Hopkins University Medical School, Baltimore, was elected president of the International Association of Urology, at the meeting of this Association recently held in Rome, Italy.

The West Virginia State Medical Association

Held its annual meeting in Wheeling, W. Va., May 13-15, under the presidency of Dr. Robt. A. Ashworth, of Moundsville. The meeting was largely attended and was in every way one of the most interesting in the history of the Association. Bluefield was tentatively selected as the 1925 place of meeting and the following officers were elected: President, Dr. G. D. Jeffers, Parkersburg; vice-presidents, Dr. W. T. Morris, Wheeling, Dr. C. B. Wylie, Morgantown, and Dr. D. A. MacGregor, Wheeling; treasurer, Dr. Hugh G. Nicholson (re-elected), Charleston. New members of council, Dr. John Folk, Bridgeport, and Dr. W. E. Vest, Huntington. Dr. D. A. MacGregor, Wheeling, was re-elected secretary until a full time secretary can be elected to take over the duties, and suitable headquarters can be selected at Charleston, in accordance with a resolution adopted at this meeting.

The Modern Hospital Publishing Company, Inc.,

Announces a prize essay competition on the subject of "The Interrelationships of Hospital and Community." Three cash prizes of $350, $150 and $100 will be awarded, and there will be such honorable mentions as may be authorized by the committee of awards. The purpose of this competition is to concentrate the thought of hospital, public health, medical and social welfare workers on this timely subject for the purpose of crystallizing opinions and defining future objectives.

The general program for the competition may be obtained from The Modern Hospital Publishing Co., Inc., 22 East Ontario Street, Chicago, Ill.

Dr. and Mrs. John B. Bullard

And small daughter, of Richmond, have just returned from a motor trip to Fayetteville, N. C., where they visited relatives.

Child Labor Abroad.

Eleven foreign countries have at least a fourteen-year age minimum for boys and girls going to work, while the United States has no national minimum, according to the report of the House Judiciary Committee recommending the passage of a child-labor amendment by Congress. Only a few States prohibit night work for both boys and girls under eighteen, but at least fourteen foreign countries do so. China has an eight-hour day for children under seventeen and India a six-hour day for children under fifteen. The United States has no national law on this subject; eleven States per-

mit from nine to eleven hours a day for children under sixteen and one State places no limit at all upon the hours a child may work.

Dr. G. H. Musgrave,

After practicing for some years at Boykins, Va., has given up private work and is now with the State Board of Health as health officer for Northampton County, Virginia, with headquarters at Cape Charles.

Dr. William H. Higgins,

Richmond, was an invited guest at the annual meeting of the South Carolina Medical Association, recently held in Orangeburg, at which place he read a paper on "A Consideration of the Under Active Thyroid."

Theaters Refuse to Page Physicians.

We note from the *Journal of the A. M. A.* that the theaters in a certain city have refused to page physicians attending shows, because some physicians have taken this means of securing free advertising for themselves. In the future, physicians in that city will have to be assigned a certain number, by the secretary of the local medical society, and that number will be flashed on the screen when the physician is wanted.

Dr. and Mrs. A. G. Vaden,

Of Cheriton, Va., recently visted Mrs. Vaden's old home at Saluda, Va.

Dr. Leathers Resigns.

Dr. W. S. Leathers, dean of the University of Mississippi School of Medicine, and president of the Mississippi State Board of Health, has resigned to take a position with the Vanderbilt University, Medical Department, Nashville, Tenn. The resignation is to take effect at end of present session.

Dr. and Mrs. Will J. Knight

Have returned to their home in Newport News, Va., after a motor trip to North and South Carolina.

The Association of American Physicians,

At their annual meeting in Atlantic City, last month, elected Dr. Lewis A. Conner, New York, president, and re-elected Dr. Thomas McCrae, Philadelphia, secretary.

The National Tuberculosis Association,

At its meeting in Atlanta, Ga., in May, elected Dr. Charles J. Hatfield, Philadelphia, president, for the coming year, and Dr. George M. Kober, Washington, D. C., secretary.

Physicians in Congress.

The National Board Bulletin announces that there are six physicians in Congress this year, four dentists, one pharmacist, and several chemists. The physicians in Senate are Dr. Royal S. Copeland, former health officer of New York City, and Dr. L. H. Ball, of Delaware; physicians in the House are Drs. J. J. Kindred, New York, L. Lazaro, New Mexico, C. Browne, New Jersey, and J. W. Summers, Washington State.

The American Gastro-Enterological Association,

At its annual meeting in Atlantic City, last month, elected Dr. Arthur F. Chace, New York, president, and Dr. John Bryant, Boston, secretary.

Danville, Va., Soon to Start on New Hospital.

It is expected that the $250,000 bequeathed the Danville, Va., General Hospital, by the late John E. Hughes, of that place, will be made available for use in August of this year, and trustees of the present hospital have closed for the purchase of a large lot on which to build the new hospital. It is proposed to have a thoroughly up-to-date hospital with capacity for 100 patients. The present hospital will be sold and the money received will be added to the bequest.

The Society for Cinematographic Instruction in Medicine and Surgery,

With headquarters at 105 West 73rd St., New York City, announces that, after two years' intensive experimentation with various cinematographic technicalities, it is now ideally equipped to produce films for the medical, surgical, dental, drug and allied professions, and invites correspondence from all those interested in membership in the Society, as well as those desirous of securing excellent and truthful motion pictures.

Get Your Iodine.

A recent survey made by the State Health Department shows that in sixty Virginia counties a large proportion of the people, especially women and girls, have simple goiter. In tidewater sections there are comparatively few cases of simple goiters, which is attributed to the fact that people near the sea eat more sea food, all kinds of which contain iodine. In all sea salts, and in most natural salts, iodine is

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present but this element is lost in the process of refinement. Salts are now being prepared for table use with the iodine content restored. As it is generally agreed that the simplest and most economical way of getting iodine into the system is through the use of iodized salt, the State Health Commissioner has sent out a letter to grocers in the Piedmont, Valley and mountain districts of the State, urging them to keep in stock salt to which a small amount of sodium iodide has been added.

The British Association for the Advancement of Science

Will hold its ninety-second annual meeting in Toronto, Canada, from the 6th to the 13th of August. Over 430 scientists from Great Britain have already signified their intention of attending. This is the first meeting in Canada since 1909. The objects of the Association are "to give a stronger impulse and a more systematic direction to scientific enquiry; to promote the intercourse of those who cultivate science in different parts of the British Empire with one another and with foreign philosophers; to obtain more general attention for the objects of science and the removal of any disadvantages of a public kind which impede its progress."

No technical qualification is required on the part of an applicant for admission as a member of the Association. The form of membership of most interest to Americans, who are cordially invited to join for 1924, is that of annual member. The fee of $7.50 made before or at the meeting entitles the annual member to attend the meeting and to receive the report; $5 entitles the member to attend the meeting and the membership ticket entitles the holder to any of the sectional meetings and to the various popular lectures, receptions, local excursions, etc., which are features of the meeting. Hotel accommodations should be made in advance of the meeting.

Additional information will be gladly supplied by the Local Secretary, British Association, Room 50, Physics Building, University, Toronto, Canada.

Dr. and Mrs. Henry Rose Carter,

Ashland, Va., left recently for Asheville, N. C., where they will spend the summer.

Elected Members of Phi Beta Kappa Society.

Of the thirty-nine students at the University of Virginia elected to membership in the Phi Beta Kappa society this year, four are from the school of medicine: Eugene Osmun Barr, Washington, D. C., Lila Morse Bonner, Greenwood, S. C., Frederic Griffin Dorwart, Newport, Pa., and Luther Wrentmore Kelly, University, Va. They were to be initiated at exercises held during the finals on June 9.

Mr. Aubrey H. Straus,

Director of Laboratories with State Board of Health, recently gave a talk before a regular meeting of the Norfolk County Medical Society, his subject being "The Value of Blood Cultures in Diagnosis."

Relief for German Children.

An editorial appearing on page 16 of April 12th issue of *Literary Digest*, should prove an incentive for us to lay aside any feeling of bitterness which might lurk in us and to help as we can the children of oppressed nations. The American Committee for Relief of German Children, Suite 2202, 130 West 42nd Street, New York City, is co-operating with Quakers in doing what they can to alleviate suffering in this war torn country. The campaign committee is composed of 100 per cent Americans, many of them known to our readers. Are these children responsible for the sorrow and suffering which has come to them? Here is an opportunity. What shall we do with it?

Vets' Bonus Makes Jobs for Stenographers and Typists.

The U. S. Civil Service Commission, Washington, D. C., announces that the passage of the bonus law requires temporary appointment of several hundred stenographer-typists and typists in the Departmental Service at Washington. Both men and women are needed. Examinations for these positions will be held each Tuesday, until further notice, in approximately 600 cities throughout the United States. It is expected the positions will continue for from six to nine months, or possibly longer. Permanent positions will also be filled from these examinations. Salaries range from $1,320 to $1,500 a year for stenographer-typists and from $1,140 to $1,320 for typists. Full information and application blanks may be secured from above named Commission.

Some Birth and Mortality Figures for 1923.

According to reports issued by the Department of Commerce, Bureau of Census, birth rates for 1923 were lower than for 1922 in 21 or the 27 states from which figures were obtained, and death rates for the same period were slightly higher in 25 of the 36 states reporting. Infant mortality rates for 1923 are generally higher than those for 1922, though 25 of the cities reporting showed a lower mortality rate than for the previous year.

The U. S. Civil Service Commission,

Washington, D. C., announces an open competitive examination for graduate nurse, for filling vacancies in U. S. Veterans' Bureau and in the Indian and Public Health Services, applications to be rated as received until June 30, 1924.

Also, examinations will be held throughout the country on July 9, for trained nurse, and trained nurse (psychiatric), to fill vacancies in the Panama Canal Service.

Information and application blanks should be secured from above named Commission.

Education and Child Labor.

Five-sixths of the Virginia children between fourteen and sixteen who went to work last year for the first time had less than an eighth-grade education. Two-fifths were fifth graders or less. These facts, reported by the State bureau of labor and industrial statistics, have led the bureau to urge an educational requirement as a prerequisite to employment.

Christmas Seal Sale Large This Year,

A meeting of the Executive Committee of the Virginia Tuberculosis Association was held in Richmond recently, and report showed that returns from the Christmas Seal Sale (with four counties then to be heard from) are $56,741.21—the largest in the history of the Association. The budget for the coming year was adopted and a program of activities decided upon. Dr. Charles R. Grandy, Norfolk, is president and Dr. William M. Smith, Berryville, executive secretary.

Progress in Chemotherapy and the Treatment of Syphilis

Is the name of a new quarterly journal, which made its appearance in April. It is to be published by the Dermatalogical Research Laboratories, 1720-1726 Lombard Street, Philadelphia, with Dr. George W. Raiziss as editor. It will be devoted to a summary, in concise form, of the more recent work in the lines suggested by its title.

New Buildings at Carville, La., Leper Home.

The first of the additional buildings provided by Congressional Act of February 20, 1923, to enlarge the National Leper Home at Carville, Louisiana, has been completed and twelve lepers who had been temporarily detained elsewhere were moved to Carville, April 4. The additional buildings, all of which are under construction, will be rapidly made available for patients and it is believed that they will be fully occupied within a few months. The appropriation, amounting to $650,000, provides additional beds for approximately 240 patients and increases the present capacity of the institution to more than 400. There is, however, still need for buildings for patients requiring specialized care and also for a therapy building, where instruction may be given in arts and crafts and other diversional employment.

Interest Increasing in "Hygeia."

As an evidence of the value health departments place on "*Hygeia*," the A. M. A. magazine devoted to individual and community health, we note that one hundred subscriptions for it were recently ordered by the Virginia State Health Department. One state society also sent in two hundred subscriptions for this magazine. Isn't there something of interest in it for you and your patients? The price is $3 a year. You may send your order for "*Hygeia*" directly to the American Medical Association, 535 N. Dearborn Street, Chicago.

Position Wanted.

Registered nurse (Virginia), with eighteen years' experience, desires a position as head nurse of a small hospital having a training school, in one of the cities of Virginia. Would prefer an institution specializing in diseases of children, or will consider position with State Board of Health in prenatal and infant welfare clinic. Best of references. Address Number 341, care this journal. (Adv.)

Obituary

Dr. Henry Harrison Jones

Died May 11, 1924, at the home of his daughter, Mrs. M. E. Hansel, Mebane, N. C.,

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after a short attack of acute indigestion, and was buried at his old home, Doe Hill, Va. He was born in Highland County, Va., eighty-one years ago, and attended a private academy, Washington College (now Washington and Lee University), and then the University of Virginia. Volunteering for service in the War between the States, he enlisted in Company B, 31st Virginia Regiment, and held the rank of first lieutenant when he was wounded at Gaines' Mill, which rendered him unfit for further military service. After the war, he studied medicine at the University of Maryland, from which he graduated in 1867, and located in Doe Hill, Va., where he practiced his profession for fifty-two years. He joined the Medical Society of Virginia in 1884.

Dr. Jones was a fine specimen of the old time country physician and an earnest Christian worker. He was for fifty years a most faithful and efficient superintendent of the Methodist Sunday School at his home. He was also interested and active in community and county welfare, a patron of education, promoter of good roads, and influential in politics.

Dr. Jones was married three times, and is survived by five children and a large number of relatives. His oldest son, Dr. A. C. Jones, of Covington, Va., died last summer.

Resolutions on Death of Dr. William S. Gordon.

The Richmond Academy of Medicine, at a meeting held May 27, 1924, adopted the following resolutions:

WILLIAM S. GORDON, M. D., 1858-1924, born in Raleigh, N. C., graduated in medicine at the Medical College of Virginia, 1879; took a special course in medicine in the Jefferson Medical College and the University of Pennsylvania, 1879-1886; elected a Fellow of the Richmond Academy of Medicine, 1886; ex-President of the Richmond Academy of Medicine; ex-Professor of Physiology, and later, of Clinical Medicine, in the University College of Medicine; finally, Professor and Emeritus Professor of Medicine in the Medical College of Virginia; a member of the Medical Society of Virginia, the Tri-State Medical Association, and the American Medical Association. Doctor Gordon died in Richmond on April 24, 1924, after two years of illness.

This is a brief biographic sketch of the professional life of Dr. William S. Gordon who was an outstanding figure in the medical faculty of Richmond; a leading diagnostician and consultant in medicine; a capable and revered teacher, holding important professorial positions; and an exemplar of highest personal and professional character.

It is almost impossible to express in few words an appreciation of Doctor Gordon, but those fine, incisive, precise and logical intellectual qualities shown in his mental processes and in his professional teaching so distinguished him that to hint of them is to bring back to memory vividly the splendid attributes of his scientific and professional mind. Really, it may be said that Dr. Gordon was a scientist first and a physician next. The scientific side of medicine was his real place; but yet in the sick-room and hospital, with skill and accuracy he performed a distinguished part.

His high professional and scientific attainments made for him a chief place among Richmond's distinguished physicians; his unsullied character and his Christian life made for him a high place in the esteem of the Richmond medical profession. Therefore,

WHEREAS, death has closed the distinguished career of our colleague be it

RESOLVED, That the Richmond Academy of Medicine expresses by this preamble and resolution its great admiration for the professional and private life of Dr. William S. Gordon, and its deepest sympathy for his bereaved family; and further be it

RESOLVED, That this tribute be spread upon the minutes of the Academy; that a copy be sent the family, and that it be published in the *Virginia Medical Monthly*.

Signed,

A. G. Brown, Jr.,
John Dunn,
Wm. R. Jones,
Committee.

Dr. Robert Llewellyn Powell,

Belmont, Va., died May 17, as a result of being shot several times by a man with whom he had had an argument several days previously. He lived two hours after being wounded. Dr. Powell was a prominent physician of Spotsylvania County and was at one time a member of the Medical Society of Virginia. He was thirty-seven years of age and graduated from George Washington University Medical School, Washington, D. C., in 1909. He was unmarried, but is survived by his mother and several brothers and sisters.

Dr. Robert Allen White,

Fairfield, Ala., died of pneumonia at his home in that place, April 15. He was forty-one years of age and graduated from the University College of Medicine, Richmond, Va., in 1907, after which he served an interneship at the U. S. Marine Hospital, Chicago, Ill.

Dr. John Ramsey Littlefield,

Of Cumberland, Md., a graduate of George Washington University Medical School, Washington, D. C., in 1908, died on April 24, as a result of pneumonia. He was forty-four years of age and served in the medical corps of the U. S. Navy, during the World War. He was connected with the staffs of the Western Maryland and Alleghany Hospitals.